federal register

Tuesday
December 4, 1979

Part IV

Office of Personnel Management

Proposed Demonstration Project; An Integrated Approach To Pay, Performance Appraisal, and Position Classification for More Effective Operation of Government Organizations

OFFICE OF PERSONNEL MANAGEMENT

Proposed Demonstration Project; An Integrated Approach To Pay, Performance Appraisal, and Position Classification for More Effective Operation of Goverment Organizations

AGENCY: Office of Personnel Management.

ACTION: Notice of proposed demonstration project.

SUMMARY: Title VI of the Civil Service Reform Act of 1978 authorizes the Office of Personnel Management to conduct demonstration projects which experiment with new and different personnel management concepts under controlled conditions. Before conducting or entering into any agreement or contract to conduct a demonstration project, the Office of Personnel Management is required to publish the project plan in the **Federal Register.** This notice meets that legal requirement.

DATES: Comment date: Written comments will be considered if received no later than February 4, 1980. Hearing dates: Public hearings will be held on the proposed project plan on: (1) January 21, 1980, in San Diego, California, from 9 a.m. to 1 p.m. (2) January 22, 1980, in Ridgecrest, California, from 9 a.m. to 1 p.m. (3) January 31, 1980, in Washington, D.C., from 9 a.m. to 12 noon.

ADDRESSES: Comment address: Send written comments to Mr. Edward A. Schroer, Director, Office of Planning and Evaluation, U.S. Office of Personnel Management, Room 3305, 1900 E Street NW., Washington, D.C. 20415.

Public hearing addresses: (1) January 21, 1980. Naval Ocean Systems Center Auditorium, 271 Catalina Boulevard, Building A–33, San Diego, California 95152; (2) January 22, 1980. Burroughs Lecture Center, Burroughs High School, Ridgecrest, California 93555; and (3) January 31, 1980. U.S. Office of Personnel Management, Room 5H09, 1900 E Street NW., Washington, D.C. 20415.

FOR FURTHER INFORMATION CONTACT: (1) On proposed demonstration project and San Diego, California, public hearings: Sue Rainville, (714) 225–2132; (2) On proposed demonstration project and Ridgecrest, California, (China Lake) public hearings: Dick Johnson (714) 939–2434; and (3) On proposed demonstration project and Washington, D.C., public hearings: Donald Hill (202) 632–6077.

SUPPLEMENTARY INFORMATION: On Proposed Demonstration Project: The Department of the Navy has submitted a proposal for consideration as a demonstration project under Title VI of the Civil Service Reform Act of 1978 (92 Stat. 1185) entitled "An Integrated Approach to Pay, Performance Appraisal, and Position Classification for More Effective Operation of Government Organizations." The purpose of the project is to demonstrate that the effectiveness of Federal laboratories can be enhanced by developing an integrated approach to pay, performance appraisal and position classification and by allowing greater managerial control over personnel functions. At the same time, the proposed systems would expand the opportunities available to employees through a more responsive and flexible personnel system. In order to accomplish these purposes, changes are proposed that include (1) a more flexible, manageable, and understandable classification system; (2) a performance appraisal system that links performance objectives, compensation, and organizational effectiveness; (3) an expanded application of the merit pay concept; (4) recognition of demonstrated individual performance in the reduction-in-force (RIF) process; (5) substitution of streamlined procedures for performance-based-action procedures for the movement of employees between classification levels; and (6) use of suspended penalties in certain adverse action situations. The demonstration base will comprise professionals (all scientists and engineers, and non-scientists and non-engineers GS–13 through 15) at the two participating organizations: the Naval Ocean Systems Center (NOSC), San Diego, and the Naval Weapons Center (NWC), China Lake, California. Additional categories that may be included subsequently are technicians and administrative professionals below GS–13 and clerical personnel. The basic increment will include 1,417 professionals at NOSC and 1,427 at NWC.

On Public Hearings: Public hearings will be held by the U.S. Office of Personnel Management at San Diego, California, Ridgecrest, California (China Lake), and Washington, D.C., during which interested persons or organizations may present their written or oral views concerning the proposed demonstration project. The hearings will be informal in nature. However, in order to regulate the course of the hearings and to provide ample opportunity for all persons and organizations desiring to present comments to do so, parties desiring to testify at one of the public hearings are requested to contact one of the persons listed under "For Further Information Contact" for a specific scheduled time. Priority will be given to scheduled parties; others will be heard in the remaining available time. Moreover, each speaker's presentation will be limited to 10 minutes. Finally, the hearing record shall be left open until February 14, 1980, to receive additional written data, views, and arguments from the parties participating in the hearings.

Office of Personnel Management.

Beverly M. Jones,

Issuance Systems Manager.

The proposed demonstration project plan reads as follows:

An Integrated Approach to Pay, Performance Appraisal, and Position Classification for More Effective Operation of Government Organizations

A Plan for a Demonstration Project Authorized by Title VI of the Civil Service Reform Act of 1978

October 1979.

Prepared by Naval Ocean Systems Center San Diego, California 92152 Naval Weapons Center, China Lake, California 93555.

Executive Summary

The enclosed proposal is submitted to the Office of Personnel Management for consideration as a demonstration project designed to improve the performance of federal employees, as authorized by Title VI of the Civil Service Reform Act (CSRA). For the reader's convenience, a broad summary of the information contained in this proposal is provided below. For more information, the reader is referred to corresponding sections of the report.

Purpose

The purpose of the project is to demonstrate that the effectiveness of federal laboratories can be enhanced by allowing greater managerial control over personnel functions and, at the same time, expanding the opportunities available to employees through a more responsive and flexible personnel system. In order to accomplish this purpose, changes are proposed that include (1) a more flexible, manageable, and understandable classification system; (2) a performance appraisal system that links performance objectives, compensation, and organizational effectiveness; (3) an expanded application of the merit pay concept; (4) recognition of demonstrated individual performance in the reduction-in-force (RIF) process; and (5) the use of suspened penalties in certain adverse action situations. Together these

changes can help managers to operate with more authority, responsibility, and skill to increase work force and organizational effectiveness and efficiency.

Participating Organizations

The Naval Ocean Systems Center (NOSC), San Diego, and the Naval Weapons Center (NWC), China Lake, Calif., will be joint participants in the project. The School of Public Administration, University of Southern California, Los Angeles, will serve as an independent project evaluator. The Office of Personnel Management (OPM), including the San Francisco Regional Office, will provide assistance to the project, as will components of the Department of the Navy.

Types and Numbers of Participating Employees

The demonstration base will comprise professionals (scientists, engineers, and all non-scientist or engineer GS–13 through –15 employees) at the two participating Centers. Additional categories that may be included subsequently are technicians and administrative professionals below GS–13 and clerical personnel. The basic increment will include 1,417 professionals at NOSC and 1,427 at NWC.

Methodology

This proposal spells out the methodology to accomplish over a 5-year demonstration period the following specific changes: (1) Five levels of classification; (2) broad pay bands within classification levels, with individual placement into one of five basic incentive pay groups; (3) development of general classification/performance standards; (4) performance appraisal based on Performance by Objectives; (5) reduction-in-force procedures that emphasize performance while substantially retaining existing ranking factors; and (6) implementation of a modified adverse action process that features the use of suspended penalties in certain adverse action situations. Figure 1 illustrates the pay and performance changes of this proposal.

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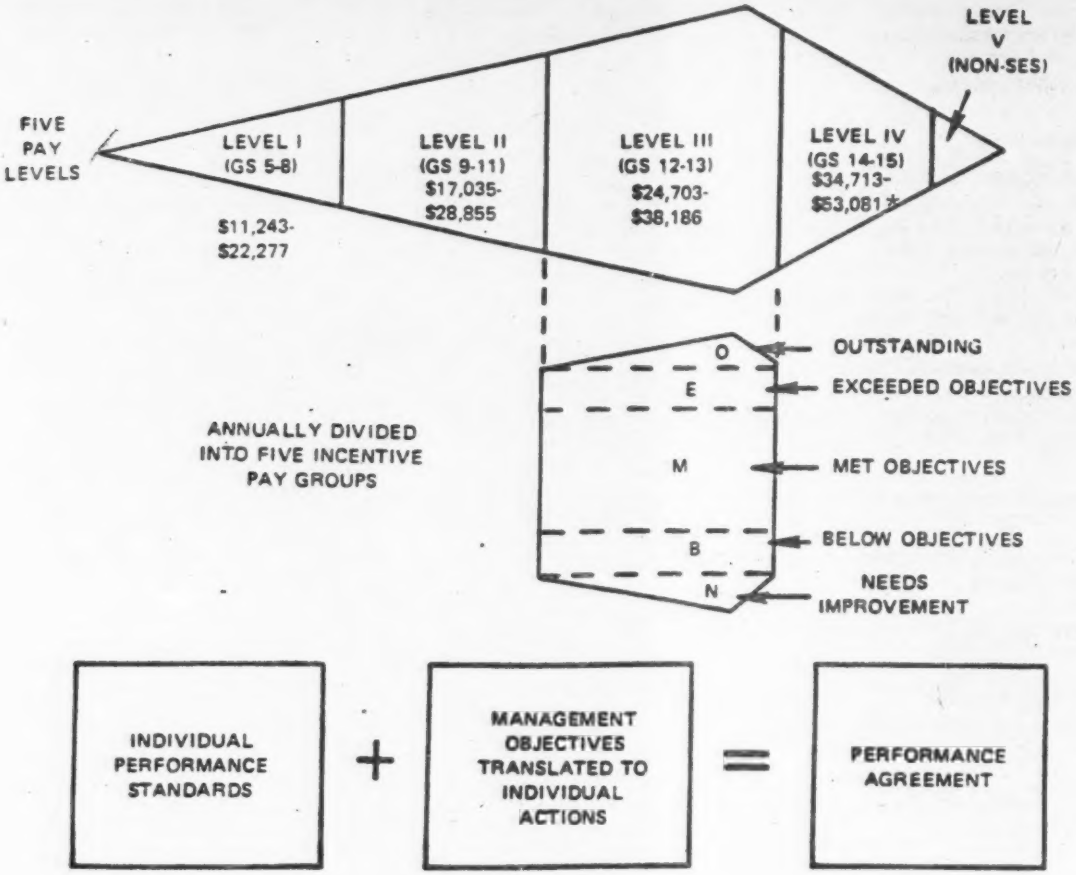

FIGURE 1. Pay and Performance Scheme.

*Subject to statutory limitation

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Training

Three groups will be trained during the first year of project implementation: (1) Supervisors of demonstration employees, (2) demonstration employees, and (3) personnel professionals and other administrative staff. Included in training for each of these groups will be information on the new system and how it works, and on employee and supervisor rights and responsibilities under this system. In addition, instruction and practice in objective-setting skills will prepare supervisors and employees for the Performance by Objectives process. Training for new supervisors and employees will be given throughout the 5 years of the project.

Evaluation Plan

In order to assess project outcomes and to evaluate the feasibility of applications to other federal organizations, a comprehensive and methodologically rigorous evaluation model is being developed. Figure 2 summarizes the major categories of variables involved and specifies a set of relationships that will be monitored and evaluated. The evaluation effort will include (1) pre-implementation criteria-setting and baseline data collection, (2) multidimensional performance measurements and trend evaluations at specified stages of the demonstration, and (3) a summative-phase comprehensive assessment of the project's overall impact on a set of outcome measures.

In addition to the above-mentioned measures and data, there will be an ongoing monitoring of existing records and reports on the laboratories. Unobtrusive measures will be kept on such basic considerations as the profile of the scientific and engineering work force of the laboratories, including EEO profiles to enable measurement of EEO impact as defined in the uniform guidelines.

When methodologically justifiable, control group data will be obtained from other Navy laboratories not involved in the project.

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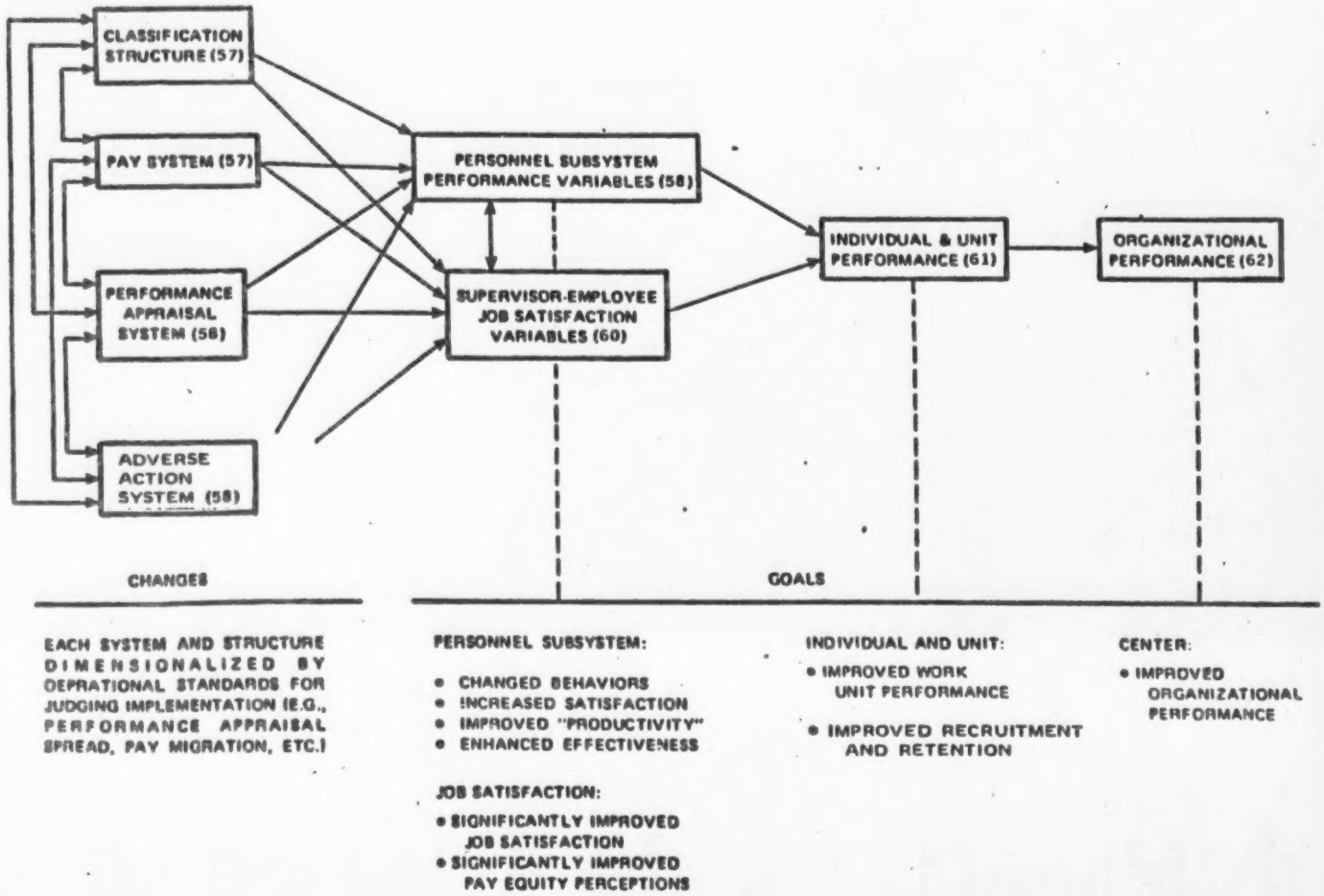
CLASSIFICATION STRUCTURE (57)
PAY SYSTEM (57)
PERFORMANCE APPRAISAL SYSTEM (58)
ADVERSE ACTION SYSTEM (58)
PERSONNEL SUBSYSTEM PERFORMANCE VARIABLES (58)
SUPERVISOR-EMPLOYEE JOB SATISFACTION VARIABLES (60)
INDIVIDUAL & UNIT PERFORMANCE (61)
ORGANIZATIONAL PERFORMANCE (62)
CHANGES
GOALS
EACH SYSTEM AND STRUCTURE DIMENSIONALIZED BY OEPRATIONAL STANDARDS FOR JUDGING IMPLEMENTATION (E.G., PERFORMANCE APPRAISAL SPREAD, PAY MIGRATION, ETC.)
PERSONNEL SUBSYSTEM:
• CHANGED BEHAVIORS
• INCREASED SATISFACTION
• IMPROVED "PRODUCTIVITY"
• ENHANCED EFFECTIVENESS
JOB SATISFACTION:
• SIGNIFICANTLY IMPROVED JOB SATISFACTION
• SIGNIFICANTLY IMPROVED PAY EQUITY PERCEPTIONS
INDIVIDUAL AND UNIT:
• IMPROVED WORK UNIT PERFORMANCE
• IMPROVED RECRUITMENT AND RETENTION
CENTER:
• IMPROVED ORGANIZATIONAL PERFORMANCE

FIGURE 2. General Evaluation Schematic for Demonstration Project. The relationships between implementation of the planned changes and variables to be evauated are shown. Numbers in parentheses refer to corresponding pages in this proposal for further discussion.

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Longitudinal measures, beginning with pre-implementation data, will be collected from the affected Centers in an effort to track impacts.

The evaluation staff will be drawn from internal and external sources. Qualified laboratory staff members will work with members of the faculty of the School of Public Administration, University of Southern California, on the design and execution of the evaluation package.

Costs

Efforts will be made to obtain congressional funding for this demonstration project. If congressional funding is not available, the costs associated with the project will be borne by the Department of the Navy and the two participating Centers, with funding provided out of normal activity training and administrative overhead funds. The total cost for the 5-year project is estimated to be $2,700,000 (in fiscal year 1979 dollars).

Authorities and Waivers of Law and Regulation Required

Specific authorities are needed by the participating Centers to establish and implement new merit pay control techniques not currently in the law. In addition, authority is needed to waive or modify certain sections of Title 5 in order to give project participants the necessary classification authority, merit pay flexibility, and other authorities to accomplish the demonstration project.

Benefits of Proposed Project

The project is expected to demonstrate that a genuinely management-centered personnel administration process will lead to more efficient and effective use of the resources of the participating Centers. In addition, by providing a means of real-world testing for models of improved and simplified classification and performance evaluation systems, the project will have results that can be applied throughout the Federal service. Some examples of anticipated effects caused by the proposed changes and corresponding measures for evaluating these effects are depicted in Table 1.

Table 1.—*Some Examples of Anticipated Effects Caused by the Proposed Changes, With Measures for Evaluating These Effects*

Change	Anticipated effects	Evaluation measures
Classification and pay	Increased recruitment success	Cost per recruit, recruit quality and quantity.
	Flexibility of workload assignment	Time, cost of reassignments and transfers.
	Increased personnel subsystem "productivity".	OPM productivity measurement approach.
Performance appraisal	Correlation of pay and performance	Perceived equity.
	Increased employee commitment	Satisfaction and commitment instruments ("A" Survey).
	Decreased turnover of "desirable" employees.	Turnover rate of critical employees.
	Increased turnover of low performers	Turnover rate.
	Increased organizational effectiveness	Peer, sponsor, and user evaluations; cost to conduct business.
Retention	Retention of high performers	Retention rates.
Adverse action	Improved behavior of problem employees	Number of suspended penalties effected as opposed to those not effected.

An Integrated Approach to Pay, Performance Appraisal, and Position Classification for More Effective Operation of Government Organizations

Introduction

The demonstration project described here is designed to make operational and systematically test a set of major modifications in federal personnel practices. These changes are intended to move the affected organizations toward a management-centered personnel administration prosess. The proposed demonstration project postulates that increased authority, flexibility, and accountability for civil service managers will lead to more productive use of federal resources and higher levels of organizational effectiveness. It is also expected that many employees will benefit from the project's performance-linked pay incentives; the opportunity for better (and more frequent) communication with supervisors on performance objectives; increased opportunity to benefit from the "dual ladder" concept that will be expanded as a result of new, more flexible classification standards; and more opportunity to move between organizational units through the use of standardized position descriptions.

The project will implement a system under which personnel administration is not approached as something to be done *for* public managers, but, rather, as something to be done *by* managers as an integral element of their range of responsibilities. The project is intended to carefully evaluate the proposition that effective public administration depends in large measure on the individual manager's capacity to deal with situations through the active design, administration, and evaluation of personnel policies and procedures.

In the competitive environment of the private sector, an organization must be capable of sensing and responding to change rapidly. the organizations that are unable to adapt to change are often forced out of existence by their more innovative, adaptive competitors. In comparison to public managers, private sector managers typically have much more flexibility in disposition and application of resources (especially personnel resources) and have much more accountability for their performance in managing these resources.

Under the existing federal personnel system, managers are denied direct control, are not encouraged to innovate, and are tightly constrained in many areas. This project, if approved, will reverse many of these conditions. Public managers in two Navy research and development organizations will be given the opportunity to function in an environment structured to promote direct managerial control over and accountability for several cirtical personnel functions.

It is anticipated that the project will demonstrate that public managers can be trusted to take these new and changed responsibilities seriously, and that they will act in the best interests of the public service, their organizations, and their personnel. It is also expected that the creation of a management-centered personnel system will, to an extent far exceeding that of the present system, stimulate managers to respond creatively to the problems of goal-oriented manpower management, to develop the required skills, and to economize in their uses of the resources allocated to them. Finally, the project will actualize the principle that public managers, once given the tools and resources, should be held accountable for their decisions and practices with regard to personnel administration, and that such accountability is an essential ingredient of effective and efficient administrative action.

It should be noted that nothing in the demonstration project proposal is intended to minimize the importance of the "human element" in personnel administration. While the project is management-centered, it has evolved with an ongoing concern for the welfare

of employees, both supervisory and nonsupervisory, who will have to jointly adhere to project provisions during the project term. None of the elements of the proposal were designed to minimize the rights of individuals or in any way diminish the concern management has for the general welfare of the work force. This demonstration will be conducted in accordance with all EEO laws, regulations, and guidelines.

Under the provisions of Title VI of the Civil Service Reform Act, OPM approval of this demonstration project constitutes approval for its potential application to all employees at the participating Centers, subject to the statutory ceiling limitation of 5,000. The initial implementation increment will include all scientists and engineers (S&Es) and all GS–13s and above, with additional career paths the subject of future discussion, consultation, and agreement with OPM.

Problem Areas in Current Personnel System

In its findings, the Task Force on the Federal Personnel Management Project identified a number of areas where changes in the federal personnel system were needed to increase the efficiency and effectiveness of the federal work force. Many of these problem areas were directly addressed by the Civil Service Reform Act (CSRA) of 1978. The CSRA also provided for demonstration projects where additional areas could be explored to determine if the removal or change of constraints or regulations could increase effectiveness and efficiency.

This proposed demonstration project addresses problems in key areas within the existing personnel system. The project proposes solutions for these problems, outlined below, by giving managers the authority and accountability to increase both the efficiency and the effectiveness of the work force by stimulating individual and organizational performance. It is expected that this approach to personnel resource management will prove adaptable to a wide spectrum of federal organizations.

Classification

The current classification system is confusing and complex; to a large extent, it diminishes the manager's role in setting pay and gives personnel classifiers an inordinate degree of responsibility in this process. Neither managers nor employees understand the current method of classifying positions; they see the system as one that impinges on their flexibility. The system delays recruitment actions, which must wait for positions to be classified. It also limits managers' ability to transfer personnel from one functional area to another; delays occur while managers wait for positions to be classified or find that the position to which an employee is to be moved is not classifiable at the appropriate grade level. Classification of positions consumes the time and energy of the personnel staff and precludes their involvement in assisting management with other critical personnel resource problems. In addition, the complex classification system causes some professionals to leave federal service for private industry, where managers can reward performance, contributions, and responsibility with pay.

The current average grade level and high grade level ceilings also limit management flexibility under the current classification system. Once a number of employees reach a given grade level, current limitations preclude promoting other deserving employees. While the demands of projects and work assignments change, management has very limited flexibility to move employees up or down. This project proposes to demonstrate that this flexibility can be obtained by placing budgetary rather than grade constraints on activities, and by giving them greater flexibility to adjust pay. Availability of broad categories of capability and responsibility in lieu of the present too finely segmented classification standards will allow suitable recognition for project mangers and technical specialists and will minimize supervisory layering.

Performance Appraisal

The performance appraisal systems existing prior to the Civil Service Reform Act were unsatisfactory to both supervisors and employees. This project will increase the importance of performance appraisals because it provides that these systems will have a close link with pay decisions.

Any system becomes meaningless without pay incentives to reward good performance or penalize low performance. While the supervisor may have high expectations for subordinate performance, a system that does not translate these expectations into meaningful management actions cannot be effective. The proposed change ensures that this translation will take place.

An associated problem is the lack of a universally applied, objective system to measure the employee's effectiveness in relation to organizational goals. The Performance by Objectives system proposed here will provide a means for generation of objective and useful feedback for the employee from the performance appraisal, as well as a basis for decision-making for the supervisor.

Merit Pay

A major problem area in the current system is the lack of sufficient incentives and rewards for good performance and disincentives and meaningful sanctions for poor performance. The CSRA changes in the merit pay concept address this problem. The participating Centers feel, however, that they do not apply to enough of the work force. The rigid classification system also works counter to the principle of flexibility for incentives and disincentives. In addition, the present practice of granting "automatic" step increases for all employees working at acceptable levels of competence limits a tool that managers could better utilize.

An effective recruitment tool that is denied to today's federal organizations is the ability to offer to recent college graduates or other potential employees the incentive that their pay will increase to keep pace with their performance and responsibilities.

While the CSRA provides a basis to address the merit pay problem for mid-level supervisors and managers, this demonstration project proposes applying CSRA concepts to a much broader base.

Reduction in Force

In existing RIF procedures, the regulations do not appropriately recognize performance as a factor in a RIF situation. The granting of 4 years' seniority on the basis of an outstanding performance rating rarely has a significant effect on RIF actions. Managers typically see some of their better performers move to lower grades or leave the organization because their performance is not adequately recognized in the RIF process. The EEO program often suffers, too, from a RIF situation where those with the lowest retention standings are recently hired female or minority-group employees.

The demonstration project addresses this problem by including performance as the prime factor in rankings for retention standings, and thus giving managers a better change to retain outstanding performers all all levels and from all EEO categories.

Suspended Penalty

Currently, situations exist where otherwise capable and previously productive employees suffer from alcohol- and drug-related disorders or become inadvertently involved in

situations of real or apparent conflict of interest. Current penalties for these offenses are frequently excessively severe if improvement or corrective behavior results, while lesser penalties are sometimes insufficient to motivate higher quality performance or changed behavior. A process that permits the assignment of relatively severe penalties that can be suspended during a specified improvement/correction period (much like a suspended sentence in the courts) is proposed as a useful management tool.

Approach of Proposed Demonstration Project

Purpose

The purpose of the project is to demonstrate that the effectiveness of federal government organizations can be enhanced by allowing greater managerial control over personnel functions. The proposed approach will move managerial responsibilities in the direction of those available to the private sector. Profit is the prime measure of efficiency and effectiveness for private sector managers. Since measures of profit are nonexistent in the public sector, the demonstration project contains a thorough and critical evaluation plan designed to measure other relevant factors that indicate effectiveness.

The demonstration project is expected to provide the two participant Centers with a means to respond much more effectively to the demands of their assigned missions. In addition, broad applicability is anticipated; by providing a means of real-world testing for models of improved and simplified classification and performance evaluation systems, the project will have results than can be applied throughout the federal service.

Changes Required

In order to accomplish the purpose of the demonstration project, it will be necessary to effect the following changes:

1. Simplify the classification system to make it more flexible, manageable, and understandable.

2. Make the performance appraisal system more realistic by including compensation as the outcome and by developing performance objectives that are tied to organizational effectiveness.

3. Provide a positive link between performance and compensation by expanding the application of the merit pay concept.

4. Emphasize performance as a primary criterion in the retention process by giving due emphasisa to demonstrated individual performance.

5. Encourage behavioral changes by use of suspended penalties in certain adverse action situations.

These changes will be effected through a model that will provide increased personnel management authority to the line supervisor, and at the same time expand the opportunities available to employees through a more responsive and flexible personnel system. The simplified classification system will group all affected personnel into broad occupational and responsibility categories. Each such classification category will have a significantly wider range of pay than is provided by the grade level boundaries of the present classified schedule. Line managers will have discretion to establish individual pay rates within the classification categories through initial offers and through performance evaluation.

Participating Organizations

It is proposed to demonstrate the model over a 5-year period at the Naval Ocean Systems Center (NOSC), San Diego, and at the Naval Weapons Center (NWC), China Lake, Calif. Although there are many differences between these two Centers (misson areas, climate, geographic location, cultural milieu), similarities of position within the Department of the Navy, types of employees, and types of work functions greatly outweigh these dissimilarities and make the two Centers uniquely fitted as a two-site experimental group. (Appendix A contains additional information on NWC and NOSC.) It is proposed to begin the demonstration with scientists, engineers, and other GS–13 through –15 employees and follow with other specific segments of the work force as feasible within the 5-year time frame.

Table 2.—*All Scientists and Engineers and All Non-S. & E. GS-13's Through -15's Involved in Demonstration Project*

Type of occupation		Number of eligible personnel by participating activity	
	Title	NOSC	NWC
Series:			
28	Environmental protection specialist		1
132	Intelligence specialist	6	2
150	Geographer		1
180	Engineering psychologist	18	1
330	Digital computer systems administrator	2	
334	Computer specialist	94	
340	Program manager	5	2
345	Program analyst	3	
401	Biological scientist	10	1
403	Microbiologist	1	
408	Ecologist	1	
413	Physiologist	2	
701	Veterinary scientist	1	
801	General engineer	55	169
806	Materials engineer	7	8
808	Architect		7
810	Civil engineer/structural engineer	1	7
830	Mechanical engineer	91	192
850	Electrical engineer	4	8
855	Electronics engineer	66	433
861	Aerospace engineer		90
893	Chemical engineer	1	20
896	Industrial engineer	2	1
1301	Physical scientist	15	14
1306	Health physicist	1	
1310	Physicist	236	205
1313	Geophysicist	1	
1320	Chemist	11	54
1321	Metallurgist		4
1350	Geologist		3
1360	Oceanographer	19	
1515	Operations research analyst	58	63
1520	Mathematician	76	87
1529	Mathematical statistican	1	3
1550	Computer scientist	7	7
Various	GS–13 through –15 non-S&Es	27	44
Total		1,417	1,427

Table 3.—*Summary of Categories and Numbers of Participating Employees*

Category of employees	Participating activity		Total
	NOSC	NWC	
Scientist and engineer	1,390	1,381	2,752
Technician	396	735	1,131
Administrative professional	245	435	680
Clerical	[1]352	[1]546	871
Total	2,383	3,097	[1]5,434

[1]Only selected groups of clerical personnel would participate to keep the total number of participating employees within the 5,000-employee demonstration project limitation.

The School of Public Administration of the University of Southern California (USC), Los Angeles, will be responsible for an independent evaluation of the project. The USC evaluation team will make this evaluation both through their own methods and measures and through validation and interpretation of the participants' evaluation processes.

The OPM, including the San Francisco Regional Office, will provide consulting assistance during the term of the project and will coordinate the personnel evaluation function to insure compliance to laws, regulations, and policies not waived by the project.

Components of the Department of the Navy will provide assistance to the demonstration project. Assistance will include cooperation of control groups (other Navy laboratories) and waiver of internal DOD and Navy regulations and rules that infringe on the purpose of the project.

Types and Numbers of Participating Employees

The demonstration base will comprise professionals (scientists, engnineers, and other GS–13 through –15 employees) at the two participating Centers. Subsequently, as project number limitations and successful experience permit, additional categories may be included in the following order, subject to consultation and agreement with OPM (approximate target dates provided):

1. Technicians below GS–13 (August 1981)
2. Administrative personnel below GS–13 (August 1982)
3. Clerical personnel (August 1983)

Table 2 lists the professional series and numbers of scientists, engineers, and GS–13 through –15 employees who will be included in the demonstration base. Table 3 summarizes the numbers of participating employees by category.

The proposal is limited to a description of the activities required to demonstrate success for the personnel in the base increment; the requirements for the other employee categories would be similar and are therefore not specified in order to avoid repetition.

Methodology

General Approach

The proposed demonstration project is geared to the Civil Service Reform Act of 1978, existing public and private personnel systems, and anticipated additional Civil Service legislation in the area of classification and pay. The project proposes a closely linked classification, performance, and compensation system, initially for technical professionals and GS–13 through –15 employees and, if this phase is successful, subsequently for other groups of laboratory personnel. Specific proposed changes include the following:

1. Five levels of classification for professionals (scientists, engineers, and related GS–13 through –15 employees).
2. Broad pay bands within classification levels, with individual pay adjusted annually by placement into one of five basic incentive pay groups.
3. Development of general classification/performance standards.
4. Individual placement in incentive pay groups during a performance appraisal process based on Performance by Objectives.
5. Modification of reduction-in-force (RIF) procedures to emphasize performance while substantially retaining existing veterans' preference, tenure, and length-of-service factors.
6. Subsitution of streamlined procedures in those instances where an employee migrates from one classification level to another because of continued poor performance. In such instances, the employee's salary will remain constant.

Demonstration Elements

Classification Levels

The heart of the proposal is the grouping of the currently used nine-grade (GS –5, –7, –9, –11, –12, –13, –14, –15, and 16+) pay/classification system for professionals into five levels of classification. These levels incorporate expanded pay flexibility by including the intervening grade levels. The levels and comparable GS grades for each level are as follows:

Level I. Assistant Professional Members, GS–5 through GS–8.

Level II. Associate Professional Members, GS–9 through GS–11.

Level III. Professional Members, GS–12 through GS–13.

Level IV. Senior Professional Members, GS–14 through GS–15.

Level V. Professional Exceptional, GS–16 and above.

The fifth level will be added where necessary to accommodate GS–16 through Public Law-level candidates who are not offered or who decline Senior Executive Service (SES) membership.

Table 4 depicts these levels and useful pay overlaps between levels.

These broad pay levels will serve to enhance competitive recruitment of quality candidates, as well as to allow tangible performance-linked distinctions between existing employees. Classification of employees under such a pay system will be less burdensome and less susceptible to judgmental errors in precise grade placement. The system, in fact, incorporates a rank-in-*person* system with its inherent flexibilities while retaining through the broad groupings the overall benefit of rank-in-*job* distinctions that can reasonably be applied by supervisors and managers. To the extent that high grade adjustments are required at the completion of the project, the exit procedures discussed later in this proposal will be employed.

This project envisions four discrete career paths that are related to the current GS grade levels as shown in Table 5 (subject to change as project experience dictates). The current GS system will remain as pay anchor for the project.

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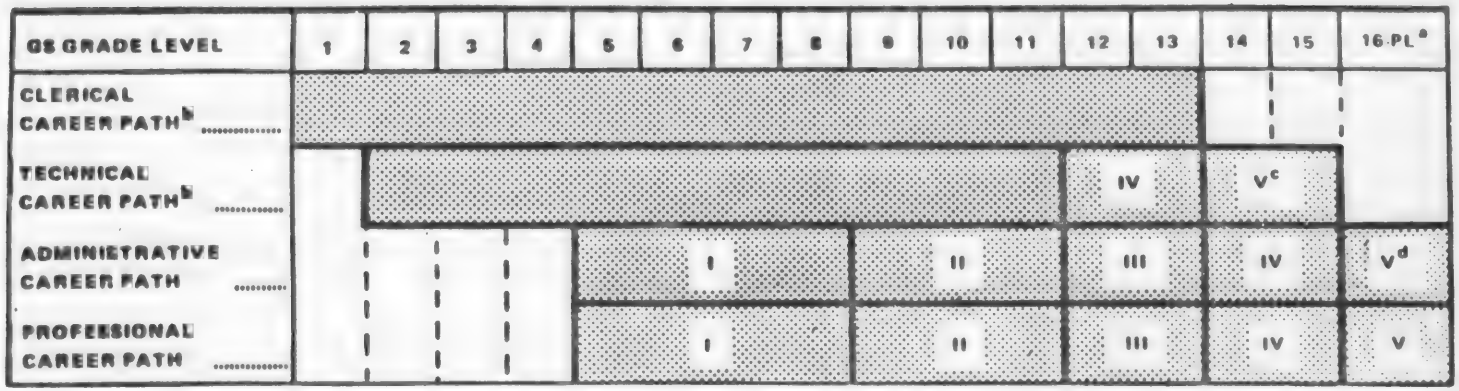
TABLE 4. Basic Professional Pay Levels and Classification Levels.

OLD SYSTEM	GS-5	GS-6	GS-7	GS-8	GS-9	GS-10	GS-11	GS-12	GS-13	GS-14	GS-15	GS 16	GS-17	GS-18	PL[d]
NEW SYSTEM	LEVEL I ASSISTANT PROFESSIONAL MEMBER				LEVEL II ASSOCIATE PROFESSIONAL MEMBER			LEVEL III FULL PROFESSIONAL MEMBER		LEVEL IV SENIOR PROFESSIONAL MEMBER		LEVEL V PROFESSIONAL EXCEPTIONAL			
NEW PAY RANGE, DOLLARS[a]	11,243 TO 22,277[b]				17,035 TO 28,855[b]			24,703 TO 38,186		34,713 TO 53,081[c]		[c]			

[a] BASED ON OCTOBER 1979 PAY RATES.
[b] SUBJECT TO POSSIBLE CHANGE. (special rates)
[c] SUBJECT TO STATUTORY LIMITATIONS.
[d] PUBLIC LAW.

TABLE 5. Career Path Identification by Classification Level as Related to Current Grade Levels.



[a] PUBLIC LAW
[b] LEVELS TO BE DETERMINED
[c] RESERVED FOR MANAGERIAL POSITIONS
[d] RESERVED FOR MANAGERIAL/EXPERT POSITIONS

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The initial phase will convert the professional population (primarily scientists and engineers and GS–13 through –15 employees of the two Centers) to appropriate career paths. As the project demonstrates its success, each participating Center may convert technician personnel below GS–13 to their career path, with subsequent conversion of the remaining two career paths in successive time frames. The technician career path is currently scheduled for conversion in August 1981.

The four separate career paths simplify personnel categorization and are reflective of private industry classification structures.

A Level V has been added in each career path primarily to provide flexibility in adapting the project to federal government-wide application and to special situations.

Classification/Performance/ Qualification Standards

The proposed classification levels for professionals will differentiate between broad groups of employees as follows:

Level I. Entrance and training positions.
Level II. Advanced training and specific task performance and development to full performance levels.
Level III. Journeyman performance-level positions and supervisors.
Level IV. Senior technical specialists, supervisors, and managers.
Level V. Individuals in GS–16 and higher positions not included in the Senior Executive Service.

These levels are sufficiently distinct that they can be easily understood by managers; correct placement will therefore be more certain.

The proposed classification system will be modeled on industry and university practices and will follow an abbreviated benchmark description approach, with classifiers and supervisors assigning incumbents' duties and responsibilities within the range of a benchmark level of difficulty. (Final classification judgments will be made with the advice of classfication specialists in the respective personnel organizations.) Position descriptions can to a large degree be standardized and presented in a side-by-side format that presents the position description along with a limited number of general performance expectations. These performance standards, matched to the level of difficulty, will in most cases be supplemented by individualized documented performance goals and expectations that will serve as the combined basis for incentive pay decisions.

Basic qualifications for each level will be determined by qualifications-rating determinations keyed to existing OPM X118 qualifications standards. References in these Z118 standards to the next lower "grade level" will be interpreted under the demonstration project as experience at the next lower classification level (i.e., broad pay band).

Incentive Groups

The pay system itself will feature incentive pay increases in lieu of step increases, comparability increases, within-level promotions, and most performance awards. Five incentive pay groups will be established, and pay for these groups will be fixed as follows. Employees who greatly exceed performance expectations will be given a basic incentive increase, plus an additional amount to be determined on the basis of funds available after disbursement of basic incentive increases to fully satisfactory performers. Two additional groups of employees who fully meet performance objectives will receive a basic incentive increase, plus a possible additional amount. Employees who meet objectives for acceptable performance in most respects will receive half the basic incentive increase, and employees who need improvement will not receive any increase. Figure 3 depicts these incentive pay groupings.

The obvious result of annual performance-related placement of employees in the proposed incentive pay groups for pay fixing purposes will be a migration of the least productive but adequate employees to the lower end of the pay band and rapid movement of high performers to the upper end of the pay band. This migration will be monitored by management and the evaluation staff to ensure that its rate is meaningful and to provide EEO data to enable measurement of EEO impact, as defined in the uniform guidelines.

Resources for incentive pay increases will include funds normally allocated for comparability increases, within-grade step increases, promotions within proposed levels and most performance awards (e.g., quality step increases and sustained superior performance awards). These resources, as increased annually, will compose the overall system control on manpower and will be adjusted to account for significant reductions or increases in manpower to meet mission requirements. Supplemental local managerial control mechanisms may include percentage distributions of the work force between basic employee classification levels and percentage distributions of adequate performers between incentive pay groupings. These allocations will be sufficiently flexible to allow alteration as demonstration experience dictates. After some experience with the project, both Centers will explore the possibility of a dollar salary increase in lieu of fixed percentage increases. If the evaluation mechanism shows that performance has increased significantly as a result of the experiment, both Centers will pursue the feasibility of allocating additional funds to reward the measured improvement in organizational effectiveness.

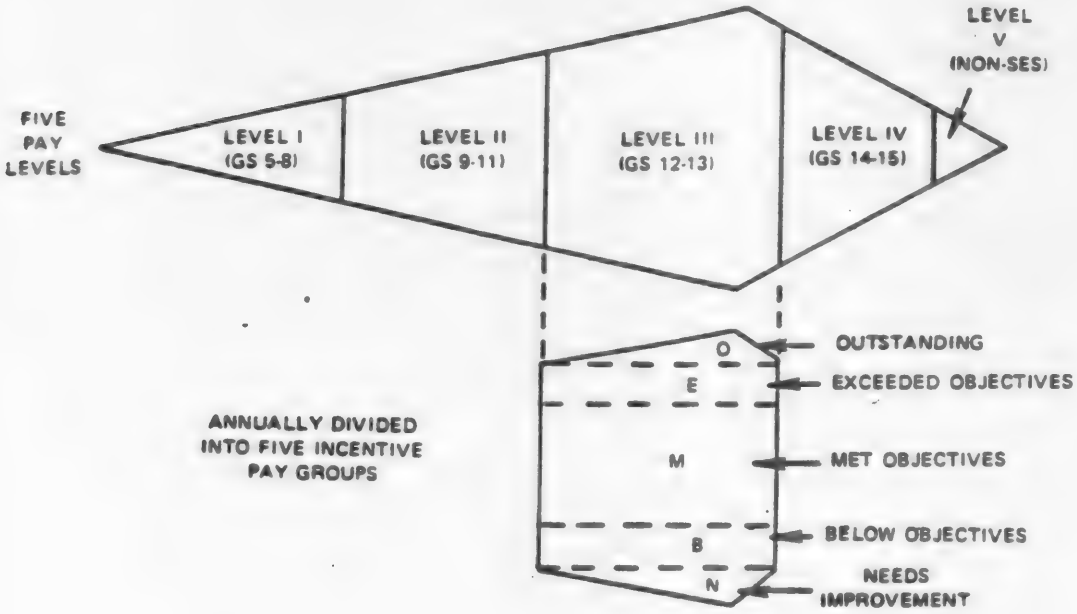


FIGURE 3. Incentive Pay Groupings Within Each Level.

A bonus approach will be used to recognize high performers who are not eligible for continuing pay increases because they are at the maximum salary rate for their classification level. The project will also explore the concept of establishing incentive pay increases based on organizational performance and will identify ways in which this can be accomplished without causing a negative impact on the block of funds dedicated to individual awards.

Performance Appraisal

Development of Performance Standards. The initial method to develop performance standards involves the use of a panel to develop broad standards for use by individual supervisors in their subsequent development of more specific and specialized standards for individual subordinates. A panel including both supervisors and employees (experts from specific occupational groups involved) will brainstorm on the tasks and attributes typically required in a position. These tasks and attributes will then be ranked in order of importance by the panel. From the resulting list of tasks and attributes, supervisors will choose appropriate tasks and attributes to formally develop individual performance standards. Both Centers will also explore industry performance standards systems for inclusion or modification to fit the standards for certain occupational groups.

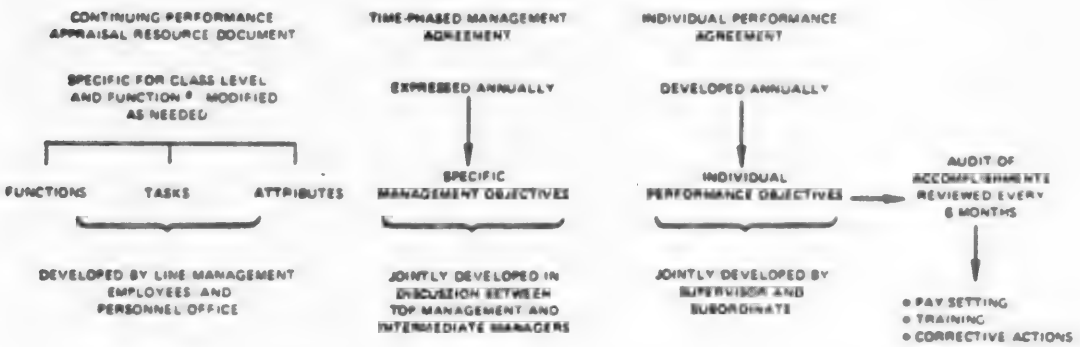
Initially, to ensure that teamwork and unit performance are encouraged while project simplicity is maintained, a critical performance element of "teamwork" will be a part of every individual rating. As the demonstration project develops, a separate method of unit recognition may well be considered, depending on the availability of funds. Under this method, unit performance, when appropriate, will be a separate weighting factor in the overall ratings of employees in exceptional units.

Performance by Objectives. The performance appraisal process will be initiated by circumstantially dictated needs (rather than a statutory requirement) to determine the compensation of employees. Both employee and supervisor will be more concerned over performance standards that affect employee pay; this additional concern will cause greater and more effective communication between the two. Under the concept of Performance by Objectives that will be used, the above broad standards will serve as a base for communication to establish mutually discussed objectives between supervisor and employee over specific expectations for the upcoming performance period. The objectives may be modified during the performance period to accomplish changes in work load planning, resource allocations, etc. Communication and written performance standards will move

increasingly in the direction of Performance by Objectives. Objectives that are understood by both supervisor and employee should be measurable to the extent possible and should provide for continuing improved performance to meet these objectives. The attributes initially developed will be keyed to areas where improvement is needed. Identification of these areas will aid in identification of training requirements used in developing individual training plans.

Organizational Objectives. A modified system of Management by Objectives, coupled with individual Performance by Objectives, will be tested. Overall management objectives will be communicated by means of discussions between top Center management and intermediate managers on performance expectations during the coming year. These overall expectations as translated for lower level implementation will be complemented by individual functional and task performance standards of a general nature. This system, as depicted in Figure 4, permits inputs from all management levels on the development of standards for individual professional performance of functions translated into specific tasks and on particular management objectives.

In an example of this system, an employee's functions, tasks, and attributes might involve serving as a project leader, gaining project acceptance and funding from the Washington-level sponsor by the use of strong technical knowledge, demonstrating organizational skills, and generating capable oral and written communications. Measurement of these established general performance expectations could then be accomplished by having the employee meet general management objectives, such as enhancing Center impact in Navy command control and communications by obtaining Center tasking for a specific high-potential project.


CONTINUING PERFORMANCE APPRAISAL RESOURCE DOCUMENT
SPECIFIC FOR CLASS LEVEL AND FUNCTION [9] MODIFIED AS NEEDED
FUNCTIONS
TASKS
ATTRIBUTES
DEVELOPED BY LINE MANAGEMENT EMPLOYEES AND PERSONNEL OFFICE
TIME-PHASED MANAGEMENT AGREEMENT
EXPRESSED ANNUALLY
SPECIFIC MANAGEMENT OBJECTIVES
JOINTLY DEVELOPED IN DISCUSSION BETWEEN TOP MANAGEMENT AND INTERMEDIATE MANAGERS
INDIVIDUAL PERFORMANCE AGREEMENT
DEVELOPED ANNUALLY
INDIVIDUAL PERFORMANCE OBJECTIVES
JOINTLY DEVELOPED BY SUPERVISOR AND SUBORDINATE
AUDIT OF ACCOMPLISHMENTS REVIEWED EVERY 6 MONTHS
• PAY SETTING
• TRAINING
• CORRECTIVE ACTIONS

[9] SUCH AS PROFESSIONAL MEMBER, ELECTRONICS ENGINEER (WEAPONS SYSTEMS).

FIGURE 4. Performance by Objectives System for Performance Appraisal.

Schedule and Mechanics of Appraisals and Incentive Groupings. The performance of employees and supervisors will be reviewed every 6 months. However, appraisals will be completed and pay will be adjusted annually. An employee whose performance, as judged against performance standards, is deemed unsatisfactory will be warned, and, if appropriate, adverse action will be taken. In Incentive Group N of employees and supervisors, performance will be judged as needing improvement (not low enough for adverse action but not high enough to fully meet objectives). Those performing in this category will receive no increase. Those with performance judged to be below objectives in some respects, to have met objectives, to have exceeded objectives, or to be outstanding will receive consideration for incentive increases and will be placed in Groups B, M, E, and O. The amount of increase to be received by individuals in these groups will be determined by individual supervisors and reviewed by high-level supervisors. Involvement of higher-level management will be used to ensure a broad-based equity among employees in separate work groups.

Review Process. All performance appraisals will be reviewed by at least the next higher level of management.

A corrective system exists to deal with problems that occur when individual performance objectives are not established at the outset of the rating period. A higher level of management will then revert to the general established functions, tasks, and attributes and will review the employee's performance against these factors. Overall judgments could still be made by this higher level of review for consistency with overall management objectives. This corrective system will insure that the neglected employee is treated equitably. Naturally, such a major oversight on the supervisor's part would be reflected in his or her performance appraisal and subsequent pay fixing and corrective actions.

The Technical Director or other appropriate level of management will be informed of all incentive pay issues, since these issues and their resolution could impact on the incentive pay of lower-level supervisors. The Personnel Department will be responsible for assisting and advising management in the performance appraisal system, evaluation techniques, dispute resolution, etc. A written performance review for each employee will be required from an appropriate level of supervision. The written review format will be as concise as possible, but sufficiently detailed to define critical job-related standards and objectives. Each performance evaluation will include supervisory comments to provide a written record of the extent to which employee performance meets, exceeds, or falls short of established standards and objectives.

Management Approach. While the performance appraisal system attempts to set specific standards communicated and understood by management, supervisor, and employee, it will still require judgments by those recommending and determining pay increases. Effective operation of this system will therefore require direct action in instances where supervisory personnel consistently exercise poor or detrimental judgments in the performance appraisal process. These poor supervisory judgments will be reflected in supervisors' pay determinations or in removal from their supervisory functions. The furtherance of this demonstration project by complete and equitable judgments of subordinates' performance will be a performance element for each supervisor. The use of high supervisory expectations will insure that supervisors will also be accountable for their increased flexibility in managing their personnel resources. The manager will, of course, also continue to be responsible for ensuring that EEO principles are followed in all personnel decisions.

Compensation

The basis for the demonstration project pay system is the General Schedule. Pay rates for the various levels of responsibility are directly keyed to this schedule. As long as GS grades exist, necessary linkages with comparable rates will be accomplished through this means. Subsequent adjustment of GS grades to locality rates, as proposed in the current Compensation Bill, will not disturb the demonstration project relationship with the GS grades. At a time when no GS system may exist, the broad levels of the demonstration project will readily serve for comparison of Bureau of Labor statistics with private enterprise pay to determine comparability. Various alternatives will be explored to maintain general equity between employees who meet objectives and their "satisfactory" counterparts in the GS pay system.

Incentive Group N, as described earlier, is a zero-increase category. This category is reserved for employees who need improvement in some respects. While these employees are not sufficiently deficient in performance to merit immediate adverse action (placement in a lower classification level or separation), they do not merit a pay increase. Employees in Groups O, E, M, and B will receive an increase in base pay, the amount of which will vary, depending on the incentive groups to which these employees are assigned. These employees may receive a bonus amount for membership in organizational elements that are rated Outstanding in performance, depending on the availability of award funds.

The "pay based upon performance" concept, when fully implemented, will result in a redistribution of current pay resources based upon individual and unit performance measured against predetermined standards. Properly developed individual standards and unit objectives that focus on mission requirements, invididual and organizational productivity, and management goals will insure that employee rewards are tied directly to greater efficiency and improved agency operations rather than to longevity or other artificial measures of worth.

The mechanics for accomplishing the redistribution of the funds pool will be as follows. The distribution of the pool of funds will be based on individual assignment to one of five individual incentive pay groups. Performance of individual employees will be appraised in August by their immediate supervisors against the performance standards established at the beginning of the rating period; employee performance will be reevaluated halfway through the period. Table 6 defines incentive groups and shows how the "individual incentive" portion of the pool will be distributed. If unit incentives are used, the "unit incentive" portion of the funds pool will be distributed in equal shares to all but Group N employees of unit identified by management as high-achieving organizations. This amount will be paid in the form of a bonus and will not become part of employee base pay for the purpose of computing the next year's increase.

Employees whose performance ratings place them in Incentive Group N or B will recieve no or limited pay increase and as a result will "migrate" downward. If incentive pay placement continues in Group N or B, employees who reach the bottom of the overlapping scale (they remain identified in the higher classification level as long as they are covered in that range) will cross the line into the next lower classification level without specific adverse action. This migration is necessary for an employee whose performance over a period of time has been deficient enough to merit the employee's placement in lower level duties/responsibilities where new opportunities for acceptable performance exist. Clearly the employee who has experienced several performance evaluations and who, in each case, has been given a year to demonstrate improvement has been provided equal or better "due process" than the obviously unsatisfactory employee who is accorded immediate performance-based action procedures and downgraded or removed after the required 30-day notice period. Further, it should be noted that in these instances the employee's pay will remain constant. The downward migration results from the need to comply with statutory pay levels. Performance-based action procedures will cover demotion between levels or removal where performance is clearly so unsatisfactory as to preclude even placement in Incentive Group N.

Table 6.—*Distribution of Individual Incentive Funds*

Incentive group	Performance	Pay adjustment rate, percent
O[1]	Outstanding—far exceeds standards for acceptable performance	x+y
E[1]	Exceeded objectives—exceeds standards for acceptable performance, but not sufficiently to warrant assignment to Incentive Group O.	x+w
M	Met objectives—fully meets standards for acceptable performance	x
B	Below objectives—does not fully meet standards for acceptable performance.	x/2
N	Needs improvement—needs improvement for work to meet established standards.	0

x=Comparability Plus: a percentage increase based on the annual comparability increase plus average annual within-grade increases and within-level career promotions.
y=An additional share (based on percentage) of the remaining funds.
w=An additional share (based on percentage) of the remaining funds, somehwat smaller than Group O share.
Incentive Groups E, M, and B will be considered one group for RIF purposes.
[1] Funds for O and E ratings will be generated primarily from funds formerly devoted to quality step increases and sustained superior performance awards. This resource will be complemented by any funds made available as a result of N and B ratings.

Pay and Grade Retention. The CSRA provision of pay and grade retention is inconsistent with this performance-based demonstration project. (It is noted that these provisions to save grades and pay seem specifically designed around problems of the GS classification and RIF systems and the inflexibilities associated with these systems.) Consequently, pay and grade retention are neither desired nor required. Waiver of this provision is requested, although the option is requested of developing a pay retention system for certain actions such as (but not limited to) Upward Mobility and Application of New Classification Standards.

Promotions. Promotions from one classification level to the next will follow basic federal merit promotion practices either competitively or, where appropriate, as exceptions to merit promotion. At the time of promotion the promoted employee will be granted an increase of no less than 10% of basic compensation. This minimum increase is subject to review and change if equity with GS system counterparts is not attained. (Basic compensation is defined as the original base pay plus any *continuing* salary increase.) The only immediate constraints to this promotion policy will occur with promotions from Level IV to Level V; in such a case, the incumbent's current salary would be close enough to any statutory limit imposed on federal salaries to preclude awardng a full 10% increase.

Minimum time-in-grade requirements will be as follows: Level I—12 months for eligibility to Level II; Level II—12 months for eligibility to Level III; Level III—12 months for eligibility to Level IV; Level IV—Eligibility for Level V determined at agency level; Level V—Not established.

As is presently the case, each Center, depending on local determinations, can establish appropriate TIG guidelines that may exceed the above minimum TIG. Any exceptions to this minimum TIG will require competitive selection from an OPM or other authorized certificate-of-eligibles at a GS grade equating to the next higher demonstation project pay level.

Entry Into and Exit From the Project

Entry into the project will be best accomplished through a "full employee protection" approach that ensures each employee an initial place in the demonstration without loss of pay. An automatic conversion from current GS grade and step into the new level and pay will be accomplished.

Mechanisms will be explored that will protect an employee's entitlement to a higher rate than the limit on GS salaries at the time of entry; that is, employees currently at the statutory pay ceiling will receive adjustments at the point Congressional approval is given to revise the ceilings upward.

Automatic Conversion. Reasons for accomplishing this automatic conversion are the time constraints of the necessary start-up time and the need for extensive training of supervisors and managers in the pay for performance concept. Employees will enter the system at the same dollar salary they hold in the GS system at the time of entrance. This automatic entrance will result in employee placement without loss in pay in the demonstration pay level comparable to GS rate. Employees will automatically hold an initial rating placing them in Incentive Group M from entrance until October 1980. At the October 1980 rating, employees will either remain in Incentive Group M and receive an increase in an amount equivalent to the October GS comparability increase or be placed in Incentive Group O and receive an additional amount based upon current criteria for granting quality salary increases and sustained superior performance awards. At that time no employee will be placed in Incentive Group E, B, or N. By August 1980 performance standards for each employee are scheduled for completion; each employee will be advised and consulted on these standards for the next performance period August 1, 1980 through August 1, 1981). The first full demonstration project adjustments will occur on October 1, 1981, with placement in appropriate incentive groups based on standards implemented on August 1, 1980 and performance during the period August 1, 1980 to August 1, 1981. The period from August 1, to October 1, each year will permit time for supervisory review of ratings. Establishment of specific rates will be effective annually at the beginning of the first pay period on or after 1 October.

New Hires. Newly hired personnel entering the demonstration project will be employed at a level consistent with duties and responsibilities of the position and individual basic qualifications for the level, as determined by rating keyed to existing X118 qualifications standards. Each Center will determine in-hire pay rates within the classification level as related to market conditions reflected in Bureau of Labor statistics or other measures. Salaries of individual candidates will be based on academic qualifications, experience, and educational substitutions.

Candidates with similar qualifications as determined above will be paid equivalent starting salaries within each classification level.

Special Pay Rates. Special rate ranges will be translated from their GS base and used where such translated rates are advantageous and provide greater flexibility in the top rates of the level. Because of the *performance-related* pay practices of the demonstration project, special rate ranges will not be used to provide automatic increases for all employees within special rate range occupations.

The representative rate definition used in the General Schedule will be replaced by a "base grade" principle. The "base grade" is the GS grade most comparable to the demonstration project level and salary as determined by the most recent project event (i.e., project entrance, incentive pay determination, promotion, or demotion). In instances where the current salary is in the area between two overlapping GS grades, the base grade is either (1) the higher of the two overlapping GS grades if the current salary meets or exceeds Step 4 of the higher GS grade, or (2) the lower of the overlapping grades if the current salary is less than Step 4 of the higher GS grade.

Exit from the project, if necessary, will be a simple, straight-forward pay protection procedure using the "base grade principle." The employees exits at the dollar amount of salary currently received matched to the appropriate grade and step in the General Schedule. This placement will consititute the basis from which the existing employee competes in a RIF action or is transferred, reassigned, or terminated. Upon exit from the system, NWC an NOSC billets and grades will be adjusted in an equitable fashion to those of other Navy laboratories.

Where the above salary fixing would result in placement in normally unused even grades (GS–6, –8, or –10), placement will be at an appropriate two-grade-interval grade according to the above "base grade" rules.

Prior to exit of employees from the demonstration project, each employee will be converted back to the appropriate GS grade, using the base grade principle. An information sheet describing the demonstrating project and the conversion procedure will accompany the Official Personnel Folder (OPF) to the new employing office as a permanent record in this OPF. This same documentation exit procedure will be used for exiting employees in any necessary instance.

Reduction in Force

Major modifications are proposed, including limiting competitive areas to career fields (Professional, Administrative, Technical, and Clerical) and ranking personnel within each competitive level primarily on the basis of incentive pay groupings and secondarily on the basis of the normal elements of tenure, veterans' preference and service computation date. These modifications will substantially increase the probability of retaining the highest-performing individuals in their positions and will also increase the probability of displacement of the lowest performing individuals. For better understanding, a diagram of this system is provided in Figure 5.

The following specific characteristics will apply to the RIF process, as it is proposed for this demonstration project.

A competitive level will include all positions of the same career field (e.g., professional), the same difficulty level (e.g., Level III), having substantially the same duties and qualifications requirements (e.g., Electronics Engineer (Computer Hardware Design)).

Competitive areas will be limited to career fields only. S&Es will compete only with other S&Es for retention. This added special feature will limit the disruption that results when, for instance, engineers are offered clerical, messenger, or laborer positions. This will also permit managers to reduce S&E work forces without affecting employees in the administrative, clerical, wage grade, or technical career paths when there is a requirement to reduce only the S&E work force.

Retention will still be based upon career status, veteran's preference, lenght of service, but it will depend primarily on the pay incentive grouping. Veteran's preference will also be modified to give retention recognition to 30% or greater compensable disabled veterans (called 30-compensable veterans), as recently enacted into legislation. A competitive level structure from highest to lowest retention standing would look as follows:

Incentive pay [group]	Career (I) or career conditional (II)	Veteran (A) or nonveteran (B)	30% compensable (D)
0	I	A	D
0	I	A	
0	I	B	
0	II	A	D
0	II	A	
0	II	B	
[EMB]	I	A	D
[EMB]	I	A	

Note.—Sequence repeats for Group E, M, and B competitive level structure; then for Group N.

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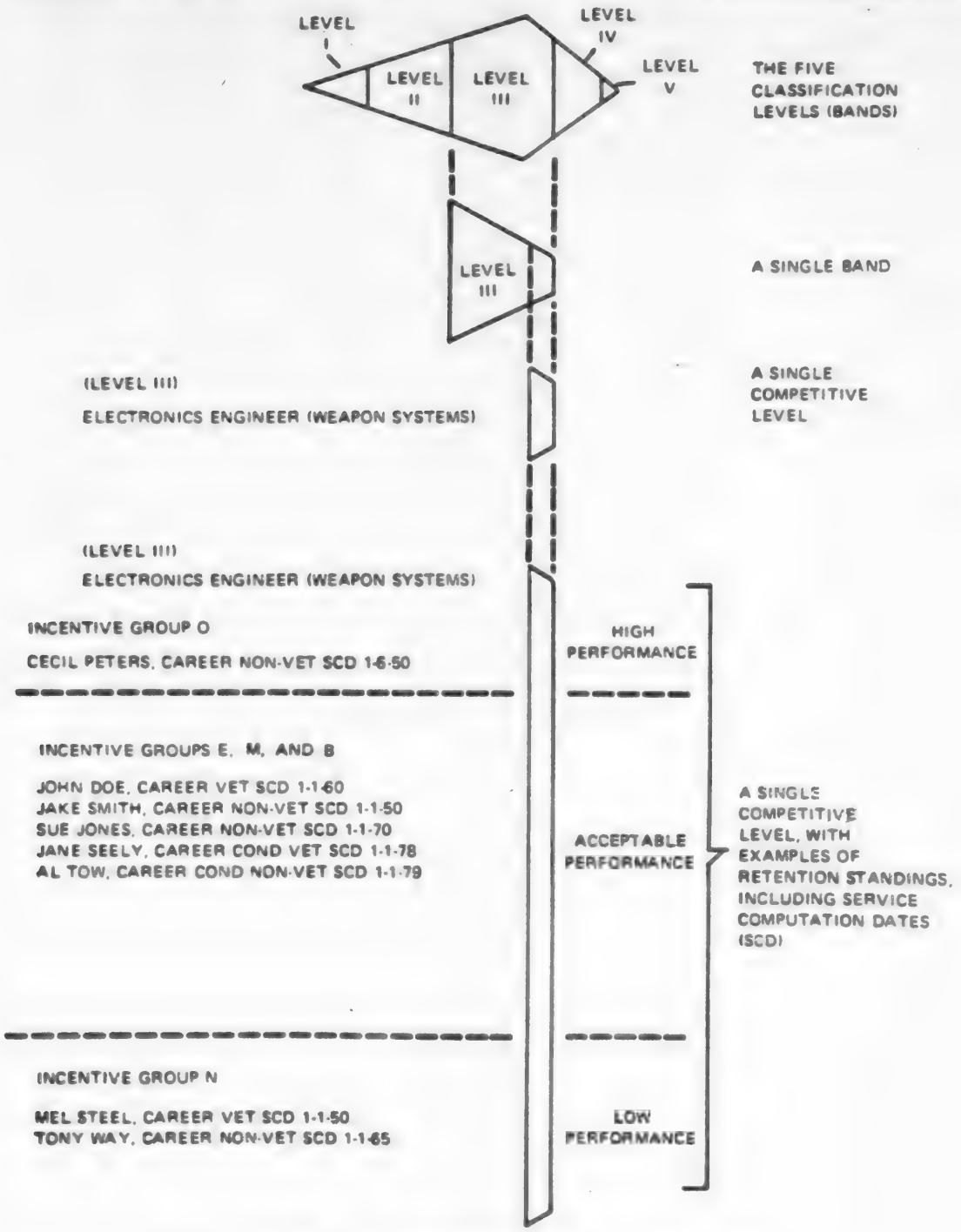
LEVEL I
LEVEL II
LEVEL III
LEVEL IV
LEVEL V
THE FIVE CLASSIFICATION LEVELS (BANDS)
LEVEL III
A SINGLE BAND
(LEVEL III)
ELECTRONICS ENGINEER (WEAPON SYSTEMS)
A SINGLE COMPETITIVE LEVEL
(LEVEL III)
ELECTRONICS ENGINEER (WEAPON SYSTEMS)
INCENTIVE GROUP O
CECIL PETERS, CAREER NON-VET SCD 1-6-50
HIGH PERFORMANCE
INCENTIVE GROUPS E, M, AND B
JOHN DOE, CAREER VET SCD 1-1-60
JAKE SMITH, CAREER NON-VET SCD 1-1-50
SUE JONES, CAREER NON-VET SCD 1-1-70
JANE SEELY, CAREER COND VET SCD 1-1-78
AL TOW, CAREER COND NON-VET SCD 1-1-79
ACCEPTABLE PERFORMANCE
A SINGLE COMPETITIVE LEVEL, WITH EXAMPLES OF RETENTION STANDINGS, INCLUDING SERVICE COMPUTATION DATES (SCD)
INCENTIVE GROUP N
MEL STEEL, CAREER VET SCD 1-1-50
TONY WAY, CAREER NON-VET SCD 1-1-65
LOW PERFORMANCE

(R) **FIGURE 5. Categorization of Professionals for the Proposed RIF Process.**

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The incentive pay group is the primary displacement tool. Individuals in Group O always displace individuals in Group E, M, and B, and Group N. E, M, and B performers displace Ns and the lowest Ns are released.

The following example is a further illustration of how RIF rules are applied. A Level III professional Electronics Engineer (specialty) within this competitive level who is in the O grouping and is a 30-compensable veteran with career status (OIAD) would *displace* by inverse order of competitive level standing any:

1. OIAD with a lesser service computation date.
2. OIA, OIB, OIIAD, OIIA, OIIB.
3. [EMB]IAD, [EMB]IA, [EMB]IB, [EMB]IIAD, [EMB]IIA, [EMB]IIB.
4. NIAD, etc. . . .

Under normal RIF procedures this same individual could *bump* any individual in the same professional career field with a retention standing of OIA or lower who occupies a position for which the employee is qualified.

If this employee is unable to displace someone in the same competitive level or bump someone in another competitive level in the professional career field, this individual could *retreat* to a Level II position that he/she was promoted from or through if this position is occupied by an individual within the same retention subgrouping (OIAD) who has a lesser service computation date.

Succinctly stated, the usual RIF system remains in effect, except for the establishment of a new and higher retention category: that of performance. This new category will be likely to ensure the retention of outstanding individuals in RIF situations.

Adverse Actions and Reconsiderations

The participating Centers have available a "suspended sentence" procedure to enhance existing adverse action procedures. This mechanism will be used to encourage changes in behavior that adversely impact on job conduct or performance and will be useful in alcohol/drug and conflict of interest situations. Suspension, demotion, and removal decisions may be suspended for up to 6 months pending specific actions by the employee to correct conduct and performance. The penalty may be canceled if conduct or performance problems are resolved. The penalty be effected if the employee does not cooperate with Center efforts to bring about the needed changes. The organization's expectations will be provided to the employee in writing.

Two special reconsideration procedures are established as follows:

1. *Reconsideration of Performance Ratings.* A request for reconsideration of performance rating will initially be taken to the next higher official above the rating reviewer (third level of supervision). This official can either grant the change requested by the individual or refer the issue to a recommending official (a Center employee) outside the immediate organizational structure and chain of authority. The recommending official should be knowledgeable in the area on which the individual is being rated. This official will, as a minimum, meet with the individual requesting reconsideration and the supervisor. The recommending official will also conduct whatever additional investigation is necessary to clarify the issues and will assist in making a recommendation to the third-level official. A member of the personnel staff will assist the recommending official in this inquiry. The third-level official, after receipt of the recommendation from the reviewing official, will issue a final decision. Both the recommendation and the decision will be given to the Technical Director or the Commander, as appropriate, for review of the action. The intent of the reconsideration process is to make it as informal as possible with a minimum of paperwork and at the same time to make it equitable to the affected employee.

2. *Reconsideration of Classification, RIF, N or B Ratings Resulting in Migration, and Other Project-Related Dissatisfactions.* Classification reconsideration requests will be directed to the supervisor of the classifier for a first-level review. If the disputed classification is not resolved at this level, it will be forwarded to the Center's principal classifier for a second-level review. Classification reconsideration requests not resolved at this level will be sent to the principal classifier at the other participating Center for a final review and decision. Requests for reconsideration of RIF actions will initially be reviewed by the Personnel Department official designated as the final authority on RIF processes. If, after this review, the dispute is not resolved, it will be forwarded to the equivalent personnel specialist at the other participating Center for final review and decision. N or B ratings that result in a migration to a lower classification level and other dissatisfactions related to the demonstration project will be presented for resolution (a) to the immediate supervisor, (b) to the second-level supervisor, and finally, if necessary (c) to an ad hoc review board appointed jointly by the Commander, the supervisor, and the employee. This board recommends final disposition to the Commander, whose decision is final.

Performance-based action procedures will govern demotion between levels or removal where performance is clearly so unsatisfactory as to preclude even placement in Incentive Group N; adverse action procedures will govern other situations where such procedures are normally used in the Federal Service.

No provisions of this project waive a right or remedy available to an employee under EEO laws or rights to present allegations to the special counsel.

Implementation of Modified System

Implementation actions will be undertaken at the time that OPM project selection or approval appears imminent. Figure 6 summarizes these actions, which include pilot study activities and dry run simulation exercises to develop and test the various implementation actions. These actions include training, system entrance, development of classification and performance standards and individual descriptions, individual performance ratings, group ranking, pay adjustments, and administrative evaluation.

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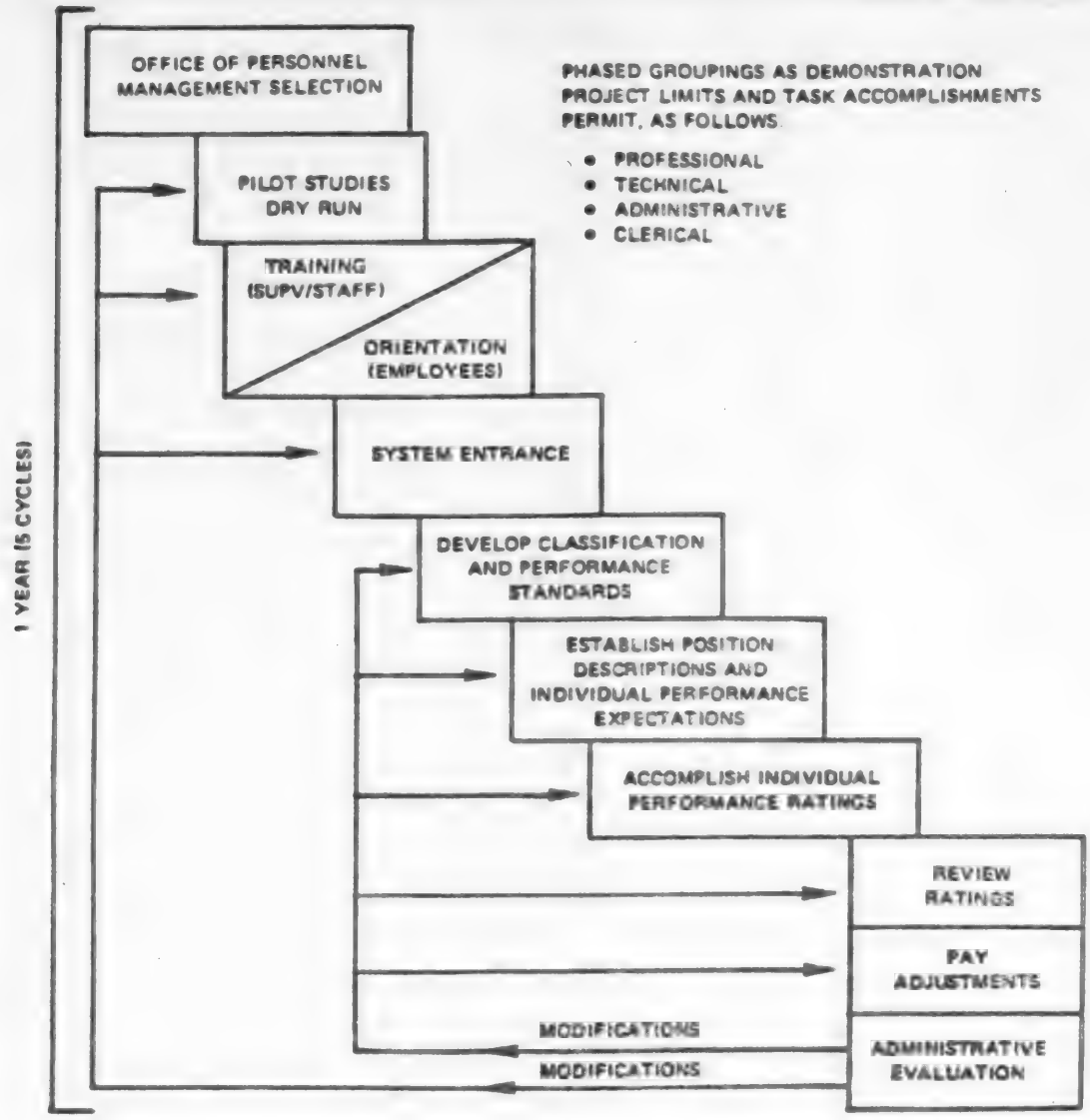

(R) FIGURE 6. Implementation Actions.

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Using the pilot study and dry run results, the training and orientation phase will focus initially on supervisory and staff personnel and subsequently on employee participants. Training and orientation will include system description and functions, implementation plans, individual and group roles, interaction with existing and planned reform legislation systems, and special skills training as needed.

Initially, entrance into the system will be a mechanical pay matching activity as spelled out in a previous section, with professionals, administrators, and technicians GS–13 through –15 entering and proceeding through one or more cycles. After a successful demonstration with the base group, other categories of employees will be considered for entry into the project in the following order: Technical and Administrative below GS–13, and Clerical. The first additions to the base group are not expected to occur until August 1981.

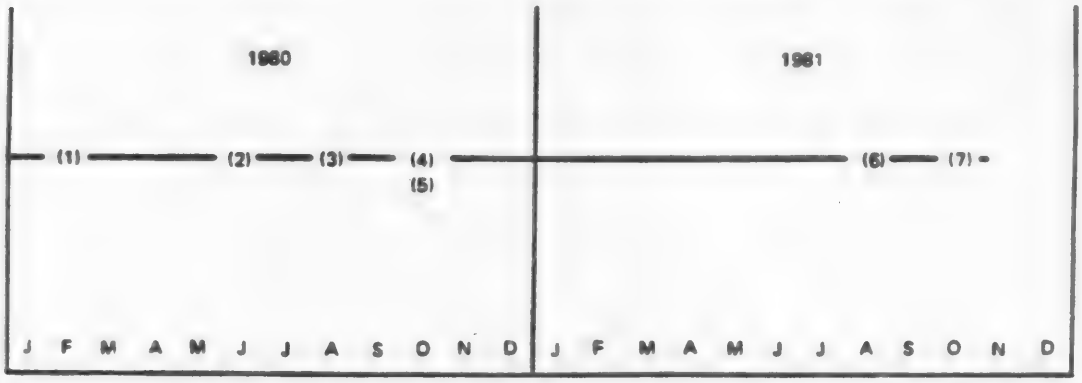
Implementation for each group will be simultaneous for supervisory and nonsupervisory employees. Figure 7 summarizes the initial implementation steps and expected milestones for the first implementation increment.

Before mechanical system entry, general classification and performance standards will be developed, using appropriate industry and university models. Emphasis will be on simplicity and utility. Subsequently, individual performance expectations will be developed with each employee to complement any general performance standards associated with group levels of difficulty.

Following an initial automatic rating in Incentive Group M and a reasonable period of performance under the new system (as spelled out previously), individuals will participate with their supervisors in a review of their performance and accomplishments in light of their duties and responsibilities, general performance standards, and individual accomplishment expectations. At this point, individuals will tentatively be placed in Incentive Group O or M and agreement will be reached on performance expectations for the next period. High-performing individuals proposed for assignment to Incentive Group O will be screened for placement in Incentive Group O as a result of joint supervisory and managerial forced ranking of all high performing candidates. Development of these processes may include consideration of unit performance appraisal, as well as the discussed individual appraisals.

Following individual performance reviews and unit ranking, final placement in incentive groups will be authorized and pay adjustments accomplished.

Each cycle will be subjected to an internal administrative verification to see if objectives are accomplished and to provide feedback for system modification where necessary. Additional cycles with the initial grouping of professional, administrator, and technician GS–13s through –15s will be used if necessary for problem resolution before extending the system to the technical and administrative personnel below GS–13 and the clerical personnel.



(1) DEVELOP PERFORMANCE AND CLASSIFICATION STANDARDS
(2) ENTER PROJECT
(3) COMMUNICATE STANDARDS
(4) COMPUTE INCREASE FOR O AND M RATINGS
(5) MAKE TRIAL APPLICATION OF INCENTIVE PAY
(6) COMPLETE ALL RATINGS
(7) MAKE INCENTIVE PAY ADJUSTMENTS FOR ALL FIVE INCENTIVE GROUPS

FIGURE 7. Schedule for Initial Implementation Steps.

Training

The key to the success or failure of the proposed demonstration project will be the training provided for all involved. This training will not only provide the necessary knowledges and skills to carry out the proposed changes, but will also lead to commitment to the program on the part of all participants.

Training at the beginning of implementation and throughout the 5-year demonstration will involve three segments of the organization.

1. Supervisors of demonstration employees.
2. Demonstration employees.
3. Administrative staff responsible for assisting managers in effecting the changeover and operation of the new system (generally personnel professionals).

The elements to be covered in the orientation portion of this training will include the following:

1. A description of the system.
2. How persons are entered into the system.
3. Pay adjustment process.
4. Familiarization with the new position descriptions and performance objectives.
5. The individual performance rating process.
6. The reconsideration process.
7. The demonstration project administrative and formal evaluation process.
8. How to exit the demonstration project and return to the present system, if necessary.
9. Instruction and practice in the objective-setting skills that will be used in the Performance by Objectives process. Intensive training will be provided in this area.

Line Supervisors

Since the essence of the proposal is a "management-centered personnel administration process" with "increased personnel management authority (for) the line supervisor," it will be of critical importance to provide the necessary knowledges and skills to managers and line supervisors. The training for line managers will include detailed information on the policies and procedures of the new system. Also included in the training will be skills training in performance appraisal, objective-setting, and discussion of objectives with employees. As a minimum, a 16-hour class in Personnel Resource Management that includes both the procedural aspects and the skills training will be necessary for all supervisors involved.

Employees

Not only will the nonsupervisory employees need to be informed and oriented to the new system, but they will also need skills training in order for the system to succeed. Few employees spend much time on personal objective-setting when there is no pressure or incentive to do so; employees therefore may lack the necessary objective-setting skills. Consequently training in objective-setting will be necessary for the employees as well as for the supervisors. At least eight to 12 hours of training that will combine orientation to the new system and training in objective-setting are proposed.

Administrative Staff

The administrative staff (generally personnel specialists) will play a key role in assisting, training, and coaching managers and employees in implementing the new system. This staff will also need experience in preparing standards and applying them. As a minimum, a 24-hour workshop is foreseen as necessary to provide the required knowledges and skills to this group.

Demonstration Project Evaluation Plan

A comprenhensive and methodologically rigorous evaluation plan for the proposed demonstration project is necessary if the objective of assessing the merits of generalization of the results throughout the Federal Government is to be met. Essential elements of this plan are set forth below in as much detail as is possible at this early stage.

Evaluation Effort Phases

Because this experiment will include major modifications in core federal personnel practices, an evaluation effort that is inclusive must occur. An overview of that effort is provided below.

Formative Phase

The initial phase, which is already under way and which will accelerate once Office of Personnel Management project selection decisions are made, is the evaluation effort that is intended to aid in structuring the experiment. During this phase the following efforts will be undertaken:

1. Identification and description of the experimental and control groups that are to be the subjects of the demonstration project.
2. Establishment of a set of pre-project data and criteria that will provide the baseline for the experiment (these will include goal-oriented data and criteria, goal-free data, and selected environmental factors).
3. Assistance in further refinement of the "treatments" that are intended to be administereed to the experimental

groups. Current personnel management practices of the public sector, private industry, and universities will be surveyed for insights into treatment options (such management practices might include the performance evaluation processes employed by companies like Southern Railway and Honeywell Inc. and the incentive pay systems in use for faculty compensation at selected universities). In addition, existing literature will be reviewed and an analysis of recent DOD and GAO studies of Project REFLEX will be scrutinized for insights.

4. Establishment of recommendations on the training that will be required for Center managers and employees as a corollary to the experiment.

Experimental Phase

Once the experiment is under way, performance monitoring evaluation efforts will be conducted. Data will be continuously collected on a wide range of measures, and periodic reports will be issued, indicating the extent of experimental treatments and effects. Measures of inputs, processes, and outputs will be recorded. Instruments will be periodically administered to collect reactive data from individuals within the experimental and control groups and from external actors such as the sponsors of the Centers' work and the users of their outputs. Interim reports on the evaluation effort will be issued to Office of Personnel Management, Director of Navy Laboratories, Assistant Deputy Chief of Naval Operations (OP–14), and management of each participating laboratory.

Summative Phase

Upon conclusion of the experimental period, an assesment of the impacts of the experiment will be undertaken. Every effort will be made to establish cause-and-effect relationships. Pre- and post-data for the experimental and control groups will be studied in light of changes in the external environment, which will have been monitored during this time frame. The degree to which the experiment has proved effective and efficient in meeting the stated goals and objectives will be assessed. In addition every effort will be made to gauge the goal-free effects of the experiment. Anticipated and *unanticipated* effects (positive and negative) will be examined in this post-project phase. Separate final project reports will be issued by the internal and external evaluation teams.

Evaluation Philosophy

Management scientists have provided a generic formula. They hold that: P is a function of $U + C$ where P equals perfomance, U uncontrollable variables, and C controllable variables.

The underlying argument of the proposed demonstration model is that the performance of Navy Laboratories can be substantially improved if core personnel management processes can become more controllable by goal-oriented line managers. In the present situation, these personnel management processes are viewed as uncontrollables or constraints.

Behavioral scientists offer a slightly different formula. They argue that by manipulating independent variables (supervisory practices), one initially affects "intervening" variables (employee satisfaction, longer time frame), "end result" variables (productivity, goal accomplishment, effectiveness).

Independent→Dependent (Intervening)→Dependent (End Results).

Both of the above formulas are pertinent to the methodology to be chosen for this experiment. Together they suggest the need for an inclusive data collection effort that encompasses controllable and uncontrollable variables, short-run measures of a "reactive" type, and longer-run measures of the impact of the experiment on goal accomplishment of the overall organization. Multiple criteria for evaluation of the experiment are a necessity.

Evaluation Measures and Criteria Measures

Evaluation literature draws a distinction between reactive research and measures and nonreactive or "unobtrusive" research and measures. The former refer to methods of research that involve researcher-researchee interactions in which reactions are given to questionnaires and interviews. People report their perceptions in response to questions posed them. For example, they might be asked their perceptions of the effectiveness of a Center or of pay equity. Certain biases are built into these measures, for example, the questions asked or not asked and the manner in which the questions are asked.

Unobtrusive measures, on the other hand, do not rely on people's reactions; they are collected from impersonal sources, such as existing records and reports. These measures are also biased in that they are dependent on previous judgments on what records should be kept and what reports should be written.

A strong argument can be made that exclusive reliance on either reactive or nonreactive measures is hazardous. For that reason, the evaluation design will incorporate both types of measures during each of the evaluation phases.

Evaluative Criteria

Evaluative criteria will be deduced from the goals and objectives stated for this experiment. As discussed earlier, multiple criteria will be developed. Some will be quantitative (cost-effectiveness), others more qualitative (perceived effectiveness, equity). Many specific criteria will be measured through use of previously validated instruments (such as organizational health inventories, the OPM Attitude Survey, an organizational commitment questionnaire, and Likert's and Herzberg's job satisfaction instruments). New data collection methods may be required for some criteria.

Evaluation Design Logic

The basic assumption of the demonstration project is that the performance of Navy laboratories can be improved substantially by implementing the proposed changes in personnel management processes. The proposed changes will place emphasis on a higher degree of involvement in and control of the personnel management processes by line managers.

The proposed demonstration project involves four major changes in existing personnel management processes: (1) A revised classification structure; (2) a revised system for determining the pay of individuals; (3) a new performance appraisal method; [1] and (4) suspended penalties for adverse actions. Indivually and in combination, these changes are expected to positively affect a cluster of personnel subsystem performance variables, supervisor and employee job satisfaction along a number of dimensions, performance of individuals and of organizational units, and overall laboratory performance.

Project Variables

Figure 2, which shows the conceptual evaluation schematic of the proposed major change sand goals, is repeated here for reader convenience.

The proposed major changes of the project are in the following areas: 1. Classification structure; 2. Pay system; 3. Performance appraisal system; [2] 4. Adverse actions.

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[1] The revised performance appraisal method will discriminate among workers in terms of level of performance. These discriminations will be factors in the proposed RIF process.

[2] Encompasses modified RIF criteria.

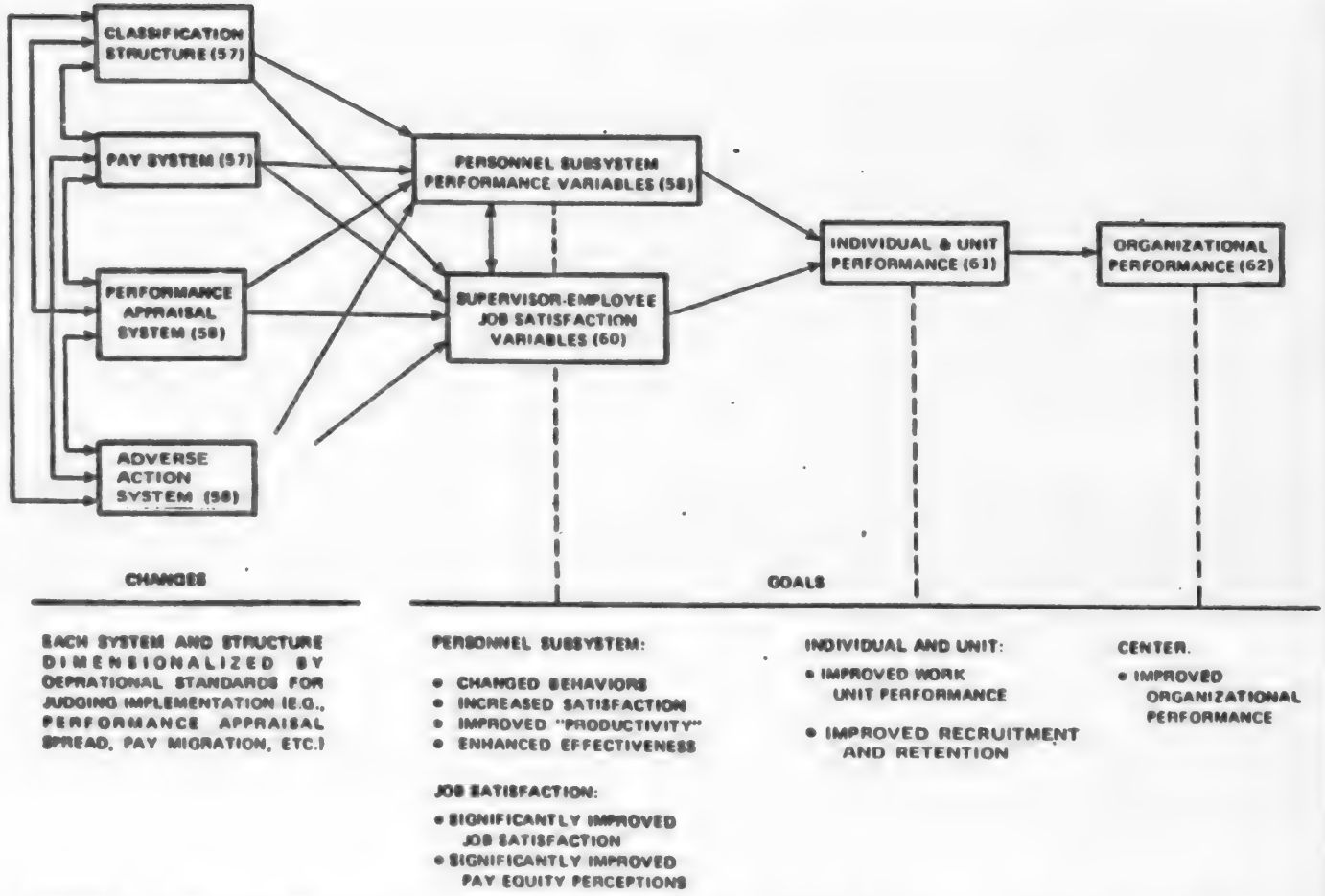
CLASSIFICATION STRUCTURE (57)
PAY SYSTEM (57)
PERFORMANCE APPRAISAL SYSTEM (58)
ADVERSE ACTION SYSTEM (58)
PERSONNEL SUBSYSTEM PERFORMANCE VARIABLES (58)
SUPERVISOR-EMPLOYEE JOB SATISFACTION VARIABLES (60)
INDIVIDUAL & UNIT PERFORMANCE (61)
ORGANIZATIONAL PERFORMANCE (62)
CHANGES
GOALS
EACH SYSTEM AND STRUCTURE DIMENSIONALIZED BY OEPRATIONAL STANDARDS FOR JUDGING IMPLEMENTATION (E.G., PERFORMANCE APPRAISAL SPREAD, PAY MIGRATION, ETC.)
PERSONNEL SUBSYSTEM:
• CHANGED BEHAVIORS
• INCREASED SATISFACTION
• IMPROVED "PRODUCTIVITY"
• ENHANCED EFFECTIVENESS
JOB SATISFACTION:
• SIGNIFICANTLY IMPROVED JOB SATISFACTION
• SIGNIFICANTLY IMPROVED PAY EQUITY PERCEPTIONS
INDIVIDUAL AND UNIT:
• IMPROVED WORK UNIT PERFORMANCE
• IMPROVED RECRUITMENT AND RETENTION
CENTER.
• IMPROVED ORGANIZATIONAL PERFORMANCE

FIGURE 2. General Evaluation Schematic for Demonstration Project. The relationships between implementation of the planned changes and variables to be evaluated are shown. Numbers in parentheses refer to corresponding pages in this proposal for further discussion.

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Dimensions of the classification structure and the pay and performance appraisal systems will be converted to variable status and used in combination to measure variance in implementation at the level of *organizational units.*

Personnel subsystem performance variables that are expected to be positively affected by the changes include productivity of the personnel subsystem, recruitment success, turnover (under normal and RIF conditions), and line management and employee satisfaction with the personnel processes.

Supervisor and employee job satisfaction are expected to be significantly increased by the implementation of the revised personnel management technologies noted above. Overall job satisfaction, perceived pay equity, and motivation are expected to be significantly greater among supervisors and employees who perform at satisfactory or superior levels than among personnel needing performance improvement.

It is expected that *organizational unit performance* will be dependent upon *individual performance* and will vary in relation to the extent that the proposed personnel processes are implemented by unit line managers, with *personnel subsystem performance variables* and *supervisor-employee job satisfaction* serving as important intervening variables.

It is expected that *Center performance* will vary in relation to the extent that revised *personnel management technologies* are implemeted in the organization with *personnel subsystem performance, supervisor-employee job satisfaction,* and *individual and organizational unit performance* functioning as important intervening variables.

Implementation Measures

The measures of implementation will be congruent with the methods and procedures developed to guide decisions on such major changes as classification, pay allocation, and performance appraisal (e.g., the algorithm that will be constructed for pay setting so that administrators will be able to monitor and control the allocation of pay).

Fundamentally, the extent of implementation of a change in a personnel process will be measured by the degree to which each of its major dimensions is actually achieved. The dimension is in effect a goal. For example, the performance appraisal system is intended to increase the extent to which supervisors discriminate between levels of performance. Thus, for this dimension, implementation will be measured statistically by the extent to which supervisors produce an equitable "evaluation spread." Similarly, when performance appraisal is linked to pay setting, it should produce direct and visible relationships between pay and performance. High performers should migrate upward and low performers downward on the pay scale.

The implementation measures will have either face or content validity. Two levels of such measures will be used: (1) Records of behaviors required by the change in question, and (2) measures of consequences, such as pay migration, that should flow automatically from the change. The measurement of implementation of the proposed changes and the achievement of project goals (dimensions) are discussed below.

Implementation of Classification Structure. The key question in this evaluation is whether or not line supervisors have allocated their personnel to levels in the revised classification structure according to the standards established by the implementation project staff. The method of determining the answer to this question will be to conduct a validation check and use a ratio of correct to incorrect allocations.

Implementation of Pay System. The question to be examined in the case is whether pay increases vary in accordance with performance appraisals. The hypothesis is that implementation of the changed personnel technologies will result in a higher increase in pay for high performers and lower or no increase in lower performers.

Implementation of Performance Appraisal System. The questions of concern for evaluation of the performance appraisal system are (1) did the supervisors develop task and attribute performance standards that meet project criteria; (2) did the supervisors develop objectives with subordinates that meet project criteria; (3) did the supervisors evaluate performance according to these objectives; (4) what is the statistical "performance spread" produced by the performance appraisals; and (5) do employees feel that the performance objectives and ratings are equitable?

Data required to these questions will be collected for each performance appraisal cycle by reviewing centrally maintained records (copies of performance objectives and performance appraisal reports) and by querying individual supervisors and subordinates.

In the event that a RIF occurs in either Center during the experimental period, data will be acquired to allow a comparison of the effects of the proposed and present RIF processes. The relative proportion of workers in each performance category that would be bumped from their positions under each process will be determined.

Implementation of a Revised Adverse Action System. The question to be answered in evaluation of the adverse actions structure is whether or not the planned, changed methods for handling adverse actions (e.g., suspended penalties) are in fact being employed; if they are being employed, what is the relative degree of success and satisfaction?

Personnel Subsystem Performance. The planned changes in personnel management technologies will increase line management's role in personnel processes. It is expected that these changes will also result in a basic shift in personnel department activities away from "policing" functions and toward "support" functions. This shift is not expected to result in less need for staff in the Personnel Department (it is more likely that an increased need will occur in the short run) but it is expected to result in changes in how time is allocated among functional activities (labor distribution) and in productivity and efficiency of effort.

Baseline data will be collected and periodic measurement will be done over the life of the experiment on *specific variables* of concern. These are as follows: 1. The productivity/efficiency of the Personnel Departments. 2. Line management and employee satisfaction with performance of the personnel subsystem. 3. Recruitment effectiveness and cost. 4. Turnover by performance category under normal and RIF conditions.

Measurement of productivity and efficiency for personnel functions will be accomplished by using the productivity measurement approach developed by OPM. This sampling-based approach to work measurement will be employed in the experimental and control laboratories before the experiment is begun, during the experiment, and after it is completed. Data acquired from this methodology will be combined with output and budgetary data that will be acquired from existing data sources.

Briefly, the OPM methodology employs detailed categories for the following personnel functions: Staffing, position classification, employee and labor relations, employee development, and general administration and other. A distinction is made between direct and indirect labor, and data are gathered by random sampling. The methodology produces a labor distribution by

personnel function. This distribution by function can be related to personnel function cost data and personnel output data.

It is planned that sampling will be conducted thoughout the 5-year term of the project. Training of supervisors and baseline data collection was initiated in September 1979.

Specific measures derivable from the above methodology will include the following: 1. Cost/functional output (e.g., positions allocated). 2. Percent of time distribution by function. 3. Functional activity/cost. 4. Correlation of productivity and unit cost measure with perceived effectiveness.

Perceived personnel subsystem effectiveness will be measured using data from the OPM Attitude Survey, which is discussed below.

An additional goal of the personnel subsystem is to increase the effectiveness of *recruiting*. Both effectiveness and cost are expected to be affected by the experiment. The enhanced flexibility in setting starting salaries and in classification should permit more timely offers and higher starting salaries for qualified candidates. The impact of the proposed changes upon recruiting will be measured by comparing results at the control and experimental Centers.

The following data will be required from experimental and control Centers: 1. Recruitment interviews, offers, and acceptance by year. 2. Post hiring evaluations by year (experimental Centers only). 3. Recruiter's evaluation of quality (experimental Centers only). 4. Reasons for declinations (experimental Centers only).

Other goals within the personnel subsystem are related to *employee turnover*. The planned changes intended to reward performance are hypothesized to aid in the retention of high performers and stimulate turnover by lower performers. Turnover data will be acquired by performance category, grade level, occupational category, etc.

Job Satisfaction and Commitment. It is expected that the proposed changes in classification, pay, performance appraisal, and appeals, in conjunction with associated changes in personnel subsystem performance variables, will result in improved supervisor and employee satisfaction and attitudes as measured along several dimensions.

An existing OPM attitude survey (the "A" Survey) will be administered in both the experimental and the control laboratories before, during, and after the experiment. OPM is planning a factor analysis and Alpha score analysis of its survey data to dimensionalize the instrument. A preliminary analysis of this instrument shows that data on the following dimensions may be obtained. 1. Satisfaction with performance appraisal methods. 2. Perceived quality of organizational climate. 3. Perceived pay equity. 4. Motivation. 5. Authority relationships. 6. Supervisory effectiveness. 7. Personal satisfaction. 8. Perceived organizational performance. 9. Personnel procedures and policies.

A sampling design for administering this instrument was completed in August 1979. Ideally, samples will be drawn by OPM, and Westinghouse Learning Corporation will be employed to administer the instrument and produce a computer tape. A computer program for analysis of the tape will be prepared at USC, where the data will be analyzed. These analyzed data will be made available to the evaluation teams of the two Centers, and an independent interpretation of the data will be made by the external evaluation team.

Individual and Unit Performance. It is expected that unit performance will vary as a function of the extent to which the unit implements the changes involved in the experiment. One reason for expecting higher unit performance is that individual work effort and performance hypothesis will be tested in the context of models that explicitly recognize the two-way causation between merit pay and level of performance. Other reasons for expecting higher unit performance are (1) attrition will increase among low performing workers, (2) greater flexibility in the recuitment process will lead to an improved quality of new hires, and (3) employee satisfaction and attitudes and organizational climate will improve, as discussed above.

Unit performance measures will be developed and administered cyclically in coordination with individual performance appraisals and pay determination staging. Unit performance measures will be generated from second-level supervisory evaluations, using instruments and procedures selected by the project staff. These measures will be independent of the rater's evaluation of the unit supervisor's performance.

Comparisons across units will be based on the extent to which unit performance improves or declines in relationship to an "idealized" performance target developed by the evaluating second-level supervisor.

Center Organizational Performance. Performance of the two participating Centers is expected to vary in relation to all other variable clusters specified in the research design. Independent evaluations of the performance of the experimental and control organizations will be obtained for purposes of longitudinal and control analyses.

A form of multi-attribute utility analysis will be employed for these evaluations. Selection, weighting, and measuring of organizational performance attributes will be accomplished by the process described below:

1. A group of evaluators competent to appraise the performance of the participating Centers will be identified and asked to serve.

2. Candidate performance attributes will be identified by the USC staff from a perusal of prior laboratory studies.

3. The candidate attributes will be reviewed with the group of evaluators and modified in accordance with these evaluators' judgments.

4. The selected performance attributes will be weighted on the basis of pooled subjective judgments, using guidelines designed to provide a subjectively established ratio scale.

5. The relative weights of the attributes will be normalized.

6. Measurement procedures for each attribute will be agreed upon by the evaluators.

7. Utility functions for each attribute will be decided upon by the evaluators.

8. Measurements will then be made; the evaluators will make these measurements where subjective judgment is required, or they will be accomplished mechanically if appropriate for particular attributes.

9. Weighted measures will then be aggregated across attributes for each Center.

10. Comparisons can then be made with possible idealized scores, both by attribute and by total.

11. Comparisons can also be made longitudinally for a given Center or between experimental and control laboratories over time.

Control

Given the evaluation design described above, cross-laboratory controls are possible for (1) employee satisfaction and attitude measures, and (3) organizational performance measures. Longitudinal and pre- and post-experiment measures will be employed for the other variables.

Additional Evaluation Data

In addition to the above-mentioned measures and data, there will be an ongoing monitoring of existing records and reports on the laboratories. Unobtrusive measures will be kept on such basic considerations as the profile of the science and engineering work force of the laboratories, including EEO profiles to enable measurement of EEO

impact as defined in the uniform guidelines.

The Evaluation Teams

Formulation of the design for evaluation of the demonstration project has taken place through an interactive process between personnel responsible for implementation of the project and participants on the external and internal evaluation teams.

External evaluation team participants are members of the faculty of the School of Public Administration, University of Southern California. The faculty members include a Professor of Research Methodology, two Professors of Public Administration with specializations in Personnel Administration, an Associate Professor with a specialty in Research and Development Administration, and two Associate Professors with degrees in Economics.

Internal teams will be employed at each of the two experimental Centers. Each team will be led by a senior Center employee with a technical background who is thoroughly familiar with the objectives of the demonstration project. Other team members will be drawn primarily from the Personnel Departments and Central Staffs on the basis of their relevant expertise.

The external evaluation team will be responsible to OPM. This team will oversee the collection of reactive data through interviews, the administration of the "A" Survey, and conduct of the work sampling of the personnel subsystems. It will also be responsible for acquisition of the data for evaluating laboratory performance. Data analysis responsibilities will include analyzing both the reactive data mentioned above and data collected by internal team members on all of the other variables described above.

The internal teams will take the lead in collecting regularly recurring data that result from implementing the planned changes in personnel technologies. They will also collect data available from existing records and reports.

All data collected by the external and internal teams will be shared in ways that protect the privacy of individual respondents. Separate analyses will be conducted and interpretive reports will be written by the external and internal teams. Independence of the external evaluation will be assured by having that team report directly to OPM. Figure 8 diagrams the relationships of OPM and the evaluation teams.

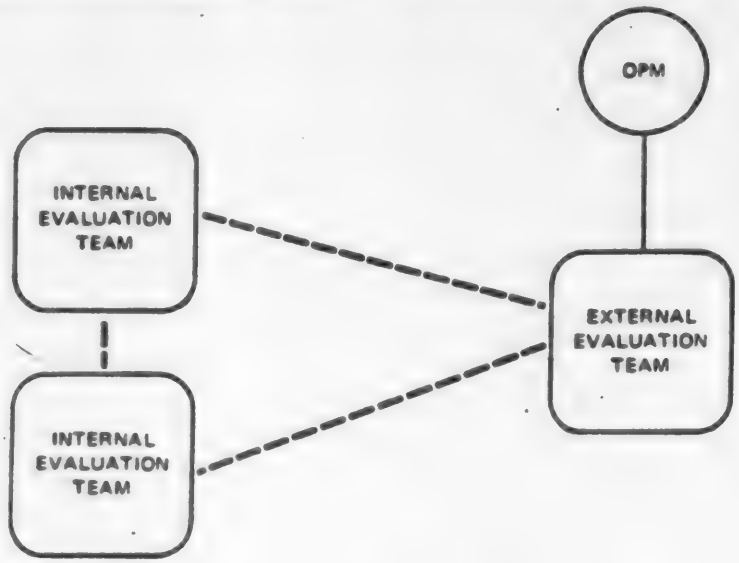

FIGURE 8. Relationships of Evaluation Teams and Office of Personnel Management.

Costs

Efforts will be made to obtain congressional funding for this demonstration project. If congressional funding is not available, the costs associated with the project will be borne by the Department of the Navy and the two participating Centers, with funding provided out of normal activity training and administrative over head funds. Major costs will be in evaluation and in implementation, including Personnel Department costs for training and rewriting standards and costs associated with the development of the demonstration project, such as for travel, research, etc. The total cost of the project for the 5-year period is estimated to be $2,700,000 (in fiscal year 1979 dollars). Table 7 summarizes demonstration project costs.

Table 7.—*Demonstration Project Costs Summarized All Costs Based on Fiscal Year 1979 Dollars*

Type of cost	Cost to participating organization, thousands of dollars		Total, thousands of dollars
	NCPC	NWC	
Project development	75	75	150
Training	300	475	775
Standards development	150	200	350
Evaluation:			
Internal	450	625	1,075
USC	75	75	150
USC (OPM)			200
Total	1,050	1,450	2,700

Authorities Lacking and Waivers of Law and Regulation Required

Aspects of Project for Which Specific Authorities Are Lacking

Authorities for a number of specific aspects not included in present Civil Service laws and regulations are needed to implement the demonstration project. These include the following:

1. Establishment of broad classification standards for employees and of classification authority for this new system.

2. Creation of broad pay bands within classification levels.

3. Establishment of four separate career paths for Federal white collar workers: professional, technician, administrative, and clerical.

4. Individual placement of demonstration project employees in incentive pay groups during a performance appraisal process based on Performance by Objectives.

5. Addition of performance as the primary determinant for retention in a RIF.

6. Provision for exclusion from existing procedures the downward migration between classification levels for failure to receive pay increases. In these cases, the actual salary of the employees will not be reduced.

7. Use of suspended penalty in certain adverse actions.

8. Establishment and implementation of control techniques that are not currently in the law. The law (5 U.S.C. 5401 (a)(D)) states that merit pay shall regulate the costs of merit pay by establishing control techniques.

9. Provision for establishment of a performance appraisal plan (subject to OPM approval) that follows the basic concepts of 5 U.S.C. 43, but is not necessarily identical to Chapter 43, or OPM regulations established under 5 U.S.C. 4305.

Waivers of Law and Regulations Required

Provisions of Civil Service law or regulation that must be waived in order for this demonstration project not to be prohibited are included in Table 8. No Civil Service rule will be affected by the demonstration project.

Table 8.—*Provisions of Laws or Regulations That Require Waiving* [1]

[Additional waivers may be required because of laws passed or rules and regulations established during the course of the project]

Law	Regulation
• • •	
Sec. 3502. Order of retention for RIF	Sec. 300.601 through .605. Time-in-grade restrictions. Sec. 351.401. Determination of retention standing. Sec. 351.402 (a) through (d). Competitive area. Sec. 351.403(a). Competitive level. Sec. 351.404(a). Retention register. Sec. 351.501. Tenure groups and subgroups, competitive service. Sec. 351.502. Tenure groups and subgroups, excepted service. Sec. 351.504. Performance ratings. Sec. 351.901 through .903. RIF appeals.
Sec. 4303. Only insofar as it applies to the downward movement between classification levels because of failure to receive pay increases.	Part 432. Only insofar as it applies to the downward movement between classification levels because of failure to receive pay increases.
Sec 5101.(1)B and (2). Classification of positions. Sec. 5102. Definitions; application. Sec. 5104. Basis for grading positions. Sec 5105 through 5107. Related to classification. Sec. 5108. Classification of positions at GS–16, –17, and –18. Sec. 5112(b). Employee and agency requests for classification appeals.	Sec. 511.101 and .201 through .203. Classification under the general schedule. Sec. 511.601 through .612. Classification appeals.
Sec. 5114. Reports; positions in GS–16, –17, and –18	
Sec. 5303. Higher minimum rates for selected professions. Sec. 5331 through 5336. GS pay rates and step increases. 5361 through 5366. Grade and pay retention. Sec. 5371. Scientific and professional positions.	Sec. 530.305 through .307. Administration of special salary rates. Sec. 531.201 and .202. Rates of basic pay. Sec. 531.203 (a) and (b). Sec. 531.204. Special provisions. Sec. 531.205. Pay conversion rules. Sec. 531.301 through .305. Adjustment of rates payable to supervisors. Sec. 531.401 through .413. Within-grade increases. Sec. 531.501 through .517. Salary retention.
Sec. 5401 through 5402. Merit pay (new law) (CSRA–1978)	• • •
• • •	Part 771. Agency grievance system.

[1] Waiver required only to the extent that this project conflicts with pertinent provisions of law or regulation.

Appendix A—Generalized Description of Project Participants

Responsibilities and Capabilities of Navy Laboratories

Both NWC and NOSC are major research and development field activities of the Naval Material Command and are under the direct command of the Chief of Naval Material (CNM). The Director of Navy Laboratories serves as a focal point for the management of these and other CNM-commanded laboratories.

The laboratories were established as a result of the need perceived during World War II for permanent ordnance research and development facilities. Today's Navy laboratories maintain the capability to carry a development all the way from initial concept formulation through advanced and engineering development to Fleet introduction and support of in-service use. This full-spectrum capability encompasses a wide variety of essential tasks, ranging from basic research to the support of specialized equipment to the creation of new technical options for the Fleet. The broad capabilities of each laboratory are focused on specific responsibilities that are delegated through assigned product areas within an assigned mission.

Although these missions encompass very different areas of expertise, all CNM laboratories have certain special characteristics in common that influence day-to-day operations as well as corporate planning. These include the following:

1. The scope of effort encompasses the full spectrum of Navy research, development, test, and evaluation (RDT&E).

2. Civilian scientific and technical employees work in cooperation with naval personnel to meet Fleet needs.

3. Work is accomplished within rigid constraints on manpower ceilings and grade levels.

4. Funding is managed through the Navy Industrial Funding accounting system.

The laboratories also share significant areas of responsibility that directly affect the responsibilities that must be placed on managers and scientific and technical employees. These responsibilities include the following:

1. Maintain an understanding of the operational and support problems and opportunities facing the Fleet and the Fleet marine forces.

2. Keep abreast of relevant scientific and technical developments of other Navy and DOD laboratories, other service RDT&E activities, universities, and industry.

3. Conduct in-house technology base programs that are complementary to outside activities and tailored to enable the Navy to exploit in a highly discriminating, objective, efficient, and timely way the relevant work of others.

4. Seek new applications of science and technology to Navy and Marine Corps problems; advance the art of branches of science and technology that are of unique or particular importance to the Navy and the Marine Corps.

5. Develop and evaluate new weapon systems concepts to enhance the effectiveness of the Navy and the Marine Corps; prove the feasibility of critical components; build and demonstrate prototypes of such systems.

6. Act as project manager or provide technical direction during the development phase for the acquisition process of new systems, when directed.

7. Provide support, as requested, to Systems Commands and project managers during both the formative stages and the actual design, development, test, and evaluation of new advanced developments, engineering developments, and operational system developments.

8. Act as technical advisors and consultants on matters within their areas of specialty to Navy and Marine Corps Bureaus and Commands and to the operating forces.

9. Maintain and provide the technical knowledge, skills, and facilities to provide prompt, direct assistance to the Fleet, and to support, modify, and improve equipments in use by the Navy and the Marine Corps.

Naval Ocean Systems Center Brief—Mission

The mission of NOSC is to be the principal Navy RDT&E center for command control, communications, ocean surveillance, surface and air launched undersea weapon systems, and supporting technologies.

Personnel

Table A–1 shows personnel data for NOSC, including groupings of scientists and engineers by discipline and by general schedule level (grade).

Funding

NOSC's funding for fiscal year 1978 was $198.3 million, with primary support coming from the Center's major sponsors—Naval Sea Systems Command, Naval Electronic Systems Command, and Director of Navy Laboratories. RDT&E funding by type included approximately 18% for exploratory development, 17% for advanced development, and 17% for operational systems development. Another large funding category was about 17% for operations and maintenance, Navy.

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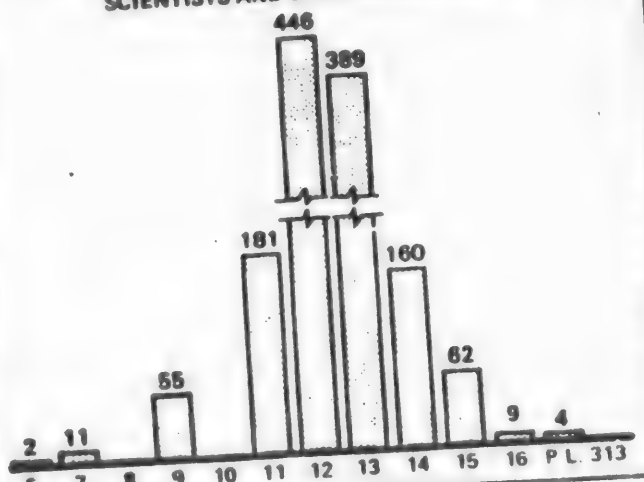
TABLE A-1. NOSC Personnel Data. Extracted from NOSC Laboratory Management Brief of 30 September 1978.

ON BOARD	MILITARY	CIVILIAN	FTP	TPTI*	UNGRADED (FTP)
	278	2549	2493	56	72

SCIENTISTS AND ENGINEERS BY GRADE



GRADED (FTP) 2421

ADMINISTRATIVE	342***
TECHNICIANS	401
SCIENTISTS AND ENGINEERS	1319

ELECTRONICS ENGINEER	683
PHYSICIST	240
MECHANICAL ENGINEER	93
MATHEMATICIAN	79
GENERAL ENGINEER	62
OCEANOGRAPHER	21
OPERATIONS RESEARCH ANAL	62
BIOLOGIST	15
PSYCHOLOGIST	17
CHEMIST	12
OTHER SCIENTISTS	22
OTHER ENGINEERS	13

DEGREES - ALL FTP PERSONNEL

	PhD	DVM	MS/MA	BS/BA
SCIENTISTS & ENGRS.	179	1	460	658
OTHER CIVIL SERVICE	5		61	159
MILITARY OFFICERS	1	3**	28	28
TOTAL	185	4	549	845

CIVILIAN CEILING(FTP)..... 2558

MILITARY ALLOWANCE:
OFFICER 64....., ENLISTED 257

*Temporary, part-time, intermittent (summer and cooperative education employees excluded)
**On loan from the Air Force
***Clerical personnel not included

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Facilities

The primary facilities for NOSC are located at San Diego, Calif.; with a laboratory at Kaneohe Bay, Oahu, Hawaii; sea ranges at San Clemente Island, Calif.; and a test range at Morris Dam, Calif. Other activities are located at La Posta, Calif.; Lake Pend Oreille, Idaho; and Cape Prince of Wales, Alaska. Future building plans include an $8.8 million ocean surveillance facility in San Diego.

Program Work

The following excerpt from the NOSC Laboratory Management Brief summarizes program work.

Command Control and Communications (C^3)

- Tactical C^3/1 Land-Based Test Site to ensure system interoperability.
- Integrated Shipboard Data Multiplex System (SDMS).
- Optical communications systems.
- Tri-service communications, navigation, and identification (CNI) system, Joint Tactical Information Distribution System (JTIDS).
- AN/USC–34 Link 11 System providing real-time communications capability for Naval Tactical Data System (NTDS).
- AN/UYQ–21 modular display suite development and evaluation.
- Advanced command and control technology development.
- VERDIN/Enhanced VERDIN, for improving submarine communications.
- Provision of a timely and reliable communication capability with the Fleet Ballistic Missile Submarine.
- System engineering to define Navy satellite requirements.
- Secure voice conferencing to ensure world-wide military command effectiveness.
- Timely and reliable minimum essential communications in electronic countermeasures (ECM) environment (low probability of interception/anti-jam—LPI/AJ) to allow successful tactical combat at sea.
- Procedures, techniques, subsystems, and control necessary to improve utilization and management of existing Navy communication assets.
- Advanced Command Control (C^3) Architectural Test Bed (ACCAT) for evaluating C^2 concepts and technology.
- Assessment of Navy Command and Control System (NCCS) performance supporting the Naval Electronic Systems Command, PME–108, in assembling a development plan for NCCS improvement and test and evaluation of its major components (NCCS system engineering, test, and evaluation).
- Theoretical and experimental research and development of efficient blue-green lasers for enhanced capability in unique underwater applications.

Ocean Surveillance

- Electromagnetic/electro-optic (EM/EO) satellite sensor and information exchange systems and surface terminals.
- Multisensor correlation and multisource integration.
- Integrated Undersea Surveillance System (IUSS).
- Advanced undersea surveillance sensors and data acquisition systems such as towed arrays, deployable arrays, fixed distributed systems, and active systems.
- Development of surveillance/intelligence data handling systems.
- Ocean surveillance system analysis and evaluation.
- Test and evaluation of major surveillance systems and advanced sonar signal processing, and research on surveillance-oriented display systems.
- Applied research in transducer and array technology. Development of an array to exploit the midfrequency regime.
- Sonobuoy Thinned Random Array Program (STRAP) to provide geometrical array stability and a system for dynamically locating array element positions.
- Long-range acoustic propagation and performance predictions including acoustic and environment modeling, and acoustic signal analysis.
- Multiple acoustic array coherent real-time processing.
- Development of a Wet End Systems Test Bed to provide test and evaluation capability for candidate undersea surveillance systems.
- Assessment of vulnerability to enemy surveillance systems.

Undersea Weapon Systems

- Advance surface ship antisubmarine warfare (ASW) fire control systems development incorporating passive target motion analysis (TMA).
- Applied research in torpedo propulsion, guidance and control, detection and classification, fire control, hydrodynamics, and hydroacoustics.
- Development of lightweight torpedoes, including MK–46 Near-Term Improvement Program (NEARTIP) (Lead Lab) and Advanced Lightweight Torpedo (ALWT) (Lead Lab).
- Adaptive Line Cancellor and Enchancer/Platform Noise Monitoring System (ALICE/PNMS).
- Undersea launch test program for cruise missiles.
- Advanced sonar systems development (SQQ–23, SQS–56, BQS–15, AN/SQQ–23A, AN/SQS–23B, AN/SQS–56).
- Submarine target model validation.

Marine Sciences

- Physical, chemical, and biological oceanography, meteorology, and sea floor geology.
- Underwater sound propagation, including acoustic and environmental modeling and acoustic signal analysis.
- Theoretical and experimental investigation of tropospheric, ionospheric, and magnetospheric effects on electromagnetic/electro-optic (EM/EO) propagation, including predictions of system performance.
- Geophysical studies in the Arctic Ocean and adjoining ice covered seas. The Arctic Submarine Laboratory provides technical support to Fleet under-ice operations.
- Marine biosciences and marine mammal systems for performing Navy tasks such as underwater object location and recovery (Lead Lab).
- Bionic sonar systems development.
- Marine environmental quality assessment.

Ocean Technology

- Unmanned remote undersea work and research systems.
- Deep ocean materials and components.
- Advanced undersea optical and acoustic sensors.

Simulation

- Development of techniques for simulation, in real-time, of the acoustic properties of submarines and targets, and of the ocean environment for underwater weapon design and evaluation.

Manufacturing and Automatic Testing Technology

- Manufacturing technology programs in electron beam projection techniques, composite materials, microwave tubes, fiber optics, torpedo propellers, and compute aided design of integrated circuits.
- Coordination of the Navy-wide RDT&E program in testing technology (Lead Lab).

Electronic Devices, Components and Subsystems

- Utilization of materials for electronic and EO devices to increase performance and reliability of electronic components.

- Development of EO devices for communications, surveillance, and weapon delivery.
- Application of industrial Large-Scale Integration/Very Large-Scale Integration (LSI/VLSI) and optics technology to signal and information processing.
- Application of fiber optics technology to underseas systems including unmanned vehicles.
- Characterization and evaluation of solid-state emitters and detectors for use in high performance military systems.
- Development of microwave devices for use in radar and communication systems.
- Shipboard radar performance assessment—Environmental/Weapons Effect Prediction System (E/WEPS).

NOSC uses systems analysis, simulation, and modeling as basic tools to identify problems, evaluate alternative solutions, and bring a systems approach to individual tasks. These techniques are applied to studies of total systems and warfare situations. They contribute to the formulation of new concepts to meet future Navy needs.

Naval Weapons Center Brief

Mission

The mission of NWC is to be the principal Navy RDT&E center for air warfare systems (except antisubmarine warfare systems) and missile weapon systems, and the national range/facility for parachute test and evaluation.

Personnel

Table A–2 shows personnel data for NWC, including groupings of scientists and engineers by discipline and by general schedule level (grade).

Funding

NWC's funding for fiscal year 1978 was $243.0 million, with the Naval Air Systems Command as the primary funding source. Other funding came from the Naval Sea Systems Command, the Chief of Naval Materiel, and other Navy commands. Funding by type included approximately 52% in the various R&D categories; other funding includes 14% for weapon procurement plus lesser percentages for a variety of categories.

Facilities

The major facilities of NWC are located on over a million acres of desert land in California's upper Mojave Desert. These include laboratories and shops for basic and applied R&D, a computer complex, and an array of instrumented air and surface ranges. Planned construction includes new facilities for parachute test work, a Range Operations Center Complex, and a Weapon System Support Facility.

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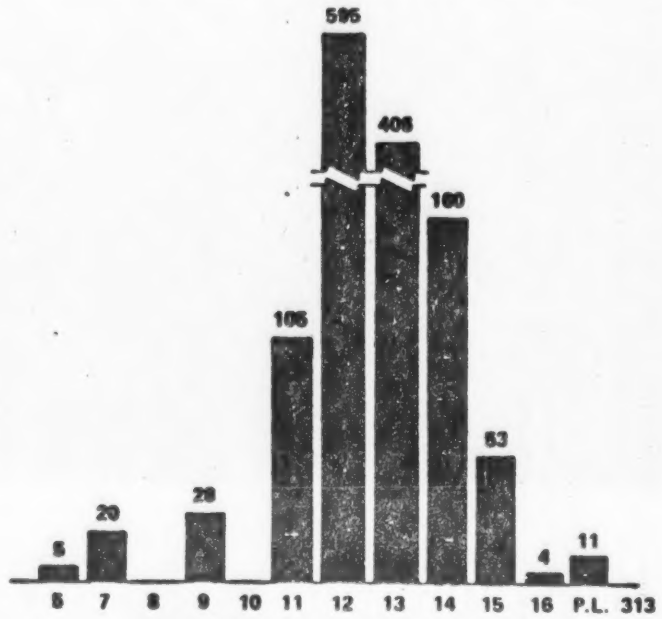
TABLE A-2. NWC Personnel Data. Extracted from NWC Laboratory Management Brief of 30 September 1978.

ON BOARD:	TOTAL MILITARY 478	TOTAL CIVILIAN 3,976	FTP* 3,932	TPTI** 44	FTP* UNGRADED 748

FTP* GRADED 3,184

ADMINISTRATIVE 1,087
TECHNICIANS 710
SCIENTISTS AND ENGINEERS 1,387

ELECTRONIC ENG	418
PHYSICIST	207
GENERAL ENG	190
MECHANICAL ENG	196
MATHEMATICIAN AND STATISTICIAN	96
CHEMIST	53
AEROSPACE ENG	81
OTHER ENG	61
OTHER SCIENTIFIC	85



SCIENTISTS AND ENGINEERS BY GRADE

CIVILIAN CEILING
3,969

MILITARY ALLOWANCE
OFFICER 52 ENLISTED 461

*FTP - Full-time permanent
**TPTI - Temporary, part-time, intermittent (summer employees excluded)

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Program Work

The following excerpt from the NWC Laboratory Management Brief summarizes program work.

Air-Launched Weapon Systems:

—Sidewinder AIM–9D/G/H*—In-service engineering.

—Sidewinder AIM–9L*—Production support for USN and USAF.

—Sidewinder AIM–9M*—Product improvement of AIM–9L.

—Sparrow AIM–7F*—Production, in-service support.

—Sparrow AIM–7M*—Product improvement of AIM–7F.

—Phoenix—Production, in-service support, and product improvement for the fuzing system.

—AMRAAM—Navy laboratory support to the Air Force SPO at ADTC Eglin.

—AIAAM—Assist NAVAIR and USAF in concept formulation.

—Walleye*—Product improvement for data link and extended range.

—Harpoon—Production, in-service support, and product improvement.

—Supersonic Tactical Missile*—Technology demonstration of propulsion, seeker, warhead, and guidance systems.

—Rockeye,* FAE,* APAM,* Bigeye*—Development and support.

—Gator—Navy lead laboratory support to Eglin AFATL.

—Night Attack/Maverick*—Development of weapon system.

Tactical Aircraft Systems:

—Aircraft Survivability*—A–7, A–4, F–14, F–18, AV–8B, LAMPS.

—A–7E Weapon System Program*—Operational software, weapons integration.

—A–6E Operational Computer Program*—Overall computer program.

—F/A–18 Weapons Systems Program*—Integration of weapons and software.

—A–4/AV–8B Angular Rate Bombing System*—Development and production support.

Defense Suppression:

—Shrike*—In-service engineering, and product improvement.

—Standard ARM*—In-service support.

—HARM*—Full-scale development.

—ERASE*—Development of technology and subsystems for anti-radiation systems.

—ALR–67*—Full-spectrum assistance to NAVAIR for development of the threat warning receiver.

—EWTES*—Electronic Warfare Threat Environment Simulator.

Surface-Launched Missiles:

—ASMD/Point Defense—Advanced missile technology.

—Seasparrow RIM–7M*—Adaptation AIM–7F to ship-launched role.

—Standard Missile—Fleet support and product improvement for fuzing and propulsion systems.

—Chaparral*—Production and field support, product improvement.

—SLU–FAE*—Development for the Army.

Test and Evaluation:*

—Conduct developmental and operational tests using ranges and T&E facilities.

—Develop and use surface and airborne electronic threat simulations.

—Develop and use airborne and land naval targets.

—Provide Trident propulsion support.

—Perform as lead activity for the Navy's secure telemetry effort.

Technology Base (Research):*

—Support of target sensing, warning, guidance, control, CM and CCM systems.

—Development of propellants and study of propulsion systems.

—Characterize high-explosive, warhead, and terminal effects.

—Solution of materials problems.

Technology Base (Weapons & Components):*

—Advanced development on component programs.

—Support validation and full-scale development of components.

—Strike Warfare Weaponry and Missile Propulsion Block Programs.

—CNM Executive Agent for Navy fuze development.

*Indicates lead laboratory responsibility.

[FR Doc. 79–37228 Filed 12–3–79; 8:45 am]

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